

**128/238-Slot, 5.2 Gbyte-Drive
Optical Jukebox
Upgrade and Conversion Instructions**

Edition 1

**Part No. C1104-90018
Printed in USA 3/98**

Printing History

New editions of these instructions incorporate all material updated since the previous edition. The printing date and part number indicate the current edition. The printing date changes when a new edition is printed. (Minor corrections and updates incorporated at reprint do not change this date.)

Part number C1104-90018

Edition 1

March 1998

Typographical Conventions

The following typographical conventions are used in these instructions:

Emphasis: Denotes important information.

Keycap: Keys on the library.

Computer Output: Information displayed in the display window and screen menu items that you can select.

WARNING

Warnings call attention to a procedure or practice that could result in personal injury if not correctly performed. Do not proceed until you fully understand and meet the required conditions.

CAUTION

Cautions call attention to an operating procedure or practice that could damage the product if not correctly performed. Do not proceed until understanding and meeting these required conditions.

NOTE

Notes provide information that can be helpful in understanding the operation of the product.

These Instructions

These upgrade/conversion instructions include the following topics:

- | | |
|-----------|--|
| Chapter 1 | Checking the parts in your kit against the parts list. Checking that you have the correct tools. Checking that you have the most current firmware for the jukebox controller and the drives. |
| Chapter 2 | Procedures for adding drives to the jukebox. |
| Chapter 3 | Procedures for converting models of this jukebox from using 2.6 Gbyte drives to using 5.2 Gbyte drives. |
| Chapter 4 | Checking and upgrading the jukebox controller and drives firmware to the most current revision level. |
| Chapter 5 | Verifying proper jukebox operation, applying labels and nameplates reflecting the upgrade/conversion, and cleanup. |

Overview

This chapter provides the following:

- Contents of each upgrade and conversion kit
- A checklist of equipment, tools, and firmware needed

Upgrades, Conversions, and Kit Contents

These instructions explain how to install upgrade/conversion kits for the following:

- Adding two drives to upgrade a four-drive jukebox to a six-drive jukebox.
- Adding four drives to upgrade a six-drive jukebox to a ten-drive jukebox.
- Activating and additional 110 slots to upgrade a 128-slot jukebox to a 238-slot jukebox.
- Converting 2.6 Gb, four- or six-drive, 128-slot jukeboxes to 5.2 Gb, four- or six-drive, 128-slot jukeboxes.
- Converting 2.6 Gb, 6-, 8-, 10-, or 12-drive, 238-slot jukeboxes to 5.2 Gb 4-, 6-, or 10-drive, 238-slot jukeboxes.

NOTE

A “J,” “K,” and “L,” suffix on a kit number denotes the sales channel in which it is distributed.

What is an Upgrade?

Upgrades add drives or available slots to the jukebox.

The 5.2-Gb-drive-based jukebox is shipped with all slots installed. The slot upgrade is done on a “half” jukebox and makes an additional 110 of these pre-installed slots available for use. Total slots available becomes 238.

For an upgrade, use the following steps:

Step 1 - Check the upgrade kit contents and that you have the necessary equipment, tools, and firmware.

Step 2 - Go to Chapter 2, “Upgrading Drives and Capacity in 5.2 Gb Drive Jukeboxes”

Step 3 - Go to Chapter 4, “Checking/Downloading Firmware”

Step 4 - Go to Chapter 5 - “Verifying Proper Jukebox Operation and Labeling.”

Table 1-1

Contents of the C1154J/K/L Upgrade Kits

Part	Qty	Part Number	Comments
The “x” in the 60000-series part numbers represents a number from “0” to “9” depending on the revision of the part.			
5.2 Gbyte drive	2	C1113-60x08	
drive SCSI cable	1	C1107-60x46	
drive interface cable	1	C1107-60x63	
drive power cable	1	C1107-60x55	
drive enclosure air seal	1	C1107-80604	
M3x6 T-10 screw	12	0515-2382	
cable clamp	2	1400-0611	
product label	1	5181-9902	placed over the current product label
Upgrade and Conversion Instructions	1	C1104-90018	These instructions.

Table 1-2

Contents of the C1158J/K/L Upgrade Kits

Part	Qty	Part Number	Comments
The “x” in the 60000-series part numbers represents a number from “0” to “9” depending on the revision of the part.			
5.2 Gbyte drive	4	C1113-60x08	
power supply, 200 W	1	C1107-60x32	
drive enclosure assembly	3	C1107-60x47	
drive enclosure air seal	2	C1107-80604	
drive power cable	2	C1107-60x55	

Part	Qty	Part Number	Comments
lower drive power cable	1	C1107-60x68	
drive interface cable	2	C1107-60x63	
drive SCSI cable	2	C1107-60x46	
lower interposer PCA	1	C1110-60x05	
lower interposer SCSI cable	1	C1107-60x60	
SCSI interface PCA	1	C1150-60x08	
ferrite RFI clamp	1	9170-1648	
SCSI module port label	1	C1192-84304	
drive/slot map label	1	C1110-84300	
single-ended SCSI terminator	1	1250-2548	
SCSI port dust cover	1	1252-5089	
wide differential terminator	1	A1658-62024	
68-pin port dust cover	1	1252-7123	
M3x6 T-10 screw	24	0515-2382	
T-20 screw	18	0515-2282	
2-56 screwlock	8	1252-7212	
jumper	1	1258-0209	
cable clamp	4	1400-0611	
short 12 V AC cable	1	C1107-60x50	
standoffs	6	0380-4416	

First Steps

Upgrades, Conversions, and Kit Contents

Part	Qty	Part Number	Comments
T-15 screw	6	2360-0552	
product label	1	5181-9902	placed over the current product label
Upgrade and Conversion Instructions	1	C1104-90018	These instructions.

Table 1-3

Contents of the C1159J/K/L Upgrade Kits

Part	Qty	Part Number	Comments
The “x” in the 60000-series part numbers represents a number from “0” to “9” depending on the revision of the part.			
configuration module	1	C1110-60x03	
product label	1	5181-9902	placed over the current product label
1200ex nameplate or 10/238 nameplate (see Note below)	1	C1107-84310 C1107-84312	C1159J kit C1159K, C1159L option #726 kits only
<p>NOTE:</p> <p>The 10/238 nameplate is used on 4-,6-, and 10-drive versions of the 238-slot jukebox. See the product numbers below.</p> <p>C1107K/L option #726</p> <p>C1110K/L option #726</p> <p>C1111K/L option #726</p>			
Upgrade and Conversion Instructions	1	C1104-90018	These instructions.

What is a Conversion?

Conversions of this jukebox mean changing from a previous capacity drive technology (2.6 Gbyte) to the new capacity (5.2 Gbyte).

The drives are changed one-to-one. If the jukebox had four 2.6 Gb drives before, it will have four 5.2 Gb drives after the conversion.

All jukeboxes based on 5.2-Gbyte drives are shipped with all possible cartridge slots installed. When converting a older jukebox, based on 2.6 Gb drives, slot magazines are included in the kit so that the converted jukebox will match the configuration of the jukeboxes as currently shipped — all slots installed.

Future upgrading of the converted jukebox from a “half” to a “full” capacity only requires plugging in the configuration module — the same as current, 5.2 Gb jukeboxes.

Check your conversion kit contents in the following table before you begin.

You will be using the following chapters:

- Chapter 3 - “Converting From 2.6 Gb Disk Drives to 5.2 Gb Disk Drives”
- Chapter 4 - “Checking/Downloading Firmware”
- Chapter 5 - “Verifying Jukebox Operation, Labeling, and Cleanup”

Table 1-4

Contents of the C5138J/K/L Conversion Kits

Part	Qty	Part Number	Comments
The “x” in the 60000-series part numbers represents a number from “0” to “9” depending on the revision of the part.			
5.2 Gbyte drive	4	C1113-60x08	
upper interposer PCA	1	C1110-60x04	
interface PCA	1	C1150-60x08	
8-slot magazine	24	C1100-44400	
6-slot magazine	6	C1160-41215	
drive/slot map label	1	C1107-84311	
ferrite RFI clamp	2	9170-1735	

First Steps

Upgrades, Conversions, and Kit Contents

Part	Qty	Part Number	Comments
EMI gasket	3	C1160-80602	
flat RFI cable clamp	6	1400-0514	
cable clamp	2	1400-1742	
T-20 screw	6	0515-2282	
M3x6 T-10 screw	24	0515-2382	
T-15 screw	6	2360-0552	
cable clamp	4	1400-0611	
wheel chock	1	4320-0448	
product label	1	5181-9902	placed over the current product label
660ex nameplate or 6/128 nameplate	1	C1104-84302 or C1104-84304	C5138J kit only C5138K and C5138L option #726 kits only
<p>NOTE:</p> <p>The 6/128 nameplate is used on 4- and 6-drive of the 128-slot jukebox. See the product numbers below.</p> <p>C1104K/L option #726</p> <p>C1105K/L option #726</p>			

Part	Qty	Part Number	Comments
User Guide	1	C1104-90015 or C1104-90016 or C1104-90017	C5138J kit only C5138K and C5138L #726 kits only C5138L #700 and #768 kits only
User Guide, localized CD ROM	1	C1112-90000	C5138J kit only
Upgrade and Conversion Instructions	1	C1104-90018	These instructions.

Table 1-5

Contents of the C5139J/K/L Conversion Kits

Part	Qty	Part Number	Comments
The “x” in the 60000-series part numbers represents a number from “0” to “9” depending on the revision of the part.			
5.2 Gbyte drive	4	C1113-60x08	
upper interposer PCA	1	C1110-60x04	
interface PCA	1	C1150-60x08	
configuration module	1	C1110-60x03	
drive/slot map label	1	C1107-84311	
ferrite RFI clamp	2	9170-1735	on SCSI cable below lower interposer PCA
EMI gasket	3	C1160-80602	
flat RFI cable clamp	6	1400-0514	
ferrite clamp	2	9170-1648	
cable clamp	2	1400-1742	

First Steps

Upgrades, Conversions, and Kit Contents

Part	Qty	Part Number	Comments
T-20 screw	6	0515-2282	extra assembly and panel mounting screws
M3x6 T-10 screw	20	0515-2382	for mounting drives in the drive enclosure
wheel chock	1	4320-0448	
cable clamp	6	1400-0611	
product label	1	5181-9902	placed over the current product label
1200 ex nameplate or 10/238 nameplate (see Note below)	1	C1107-84310 or C1107-84312	C5139J C5139K and C5139L #726 kits only
<p>NOTE:</p> <p>The 10/238 nameplate is used on 4-, 6-, and 10-drive versions of the 238-slot jukebox. See the product numbers below.</p> <p>C1107K/L option #726</p> <p>C1110K/L option #726</p> <p>C1111K/L option #726</p>			
User Guide	1	C1104-90015 or C1104-90016 or C1104-90017	C1139J kit only C5139K and C5139L option #726 kits only C5139L #700 and #768 kits only
User Guide, localized CD ROM	1	C1112-90000	C5133J kit only
Upgrade and Conversion Instructions	1	C1104-90018	These instructions.

Equipment, Tools, and Firmware Needed

PC Tool Equipment and Software Needed

When upgrading or converting the library you will be connecting your PC tool to the jukebox for two reasons: downloading firmware to the jukebox controller and drives and verifying proper operation of the drives after installation. The following hardware and software is required:

- IBM AT-compatible computer
- Adaptec interface board
- Cables and adapters that will enable you to connect the SCSI port of your PC tool to a high-density SCSI port on the jukebox.

In addition to a service SCSI cable stored inside the jukebox you may need an adapter from the list below:

PTI cable:	50-pin to 68-pin cable (PTI part number HP01)
Adaptec products	Adaptec APA 1460 connector (Adaptec part no. ACK-1460-50HD)
	Internal converter (Adaptec part no. ACK-68P-50P-IU)
	Standard 68-pin male to 68-pin male SCSI cable

- A firmware download utility
- An MO scratch disk for testing the drives.

SCSI PRO®

CoComp
www.cocomp.com

SCSI Toolbox®

Peripheral Test Instruments (PTI)
www.pti.com

First Steps

Equipment, Tools, and Firmware Needed

Tools Required

- T-10 and T-20 Torx® drivers

Firmware Needed

Before beginning an upgrade or conversion, obtain the most current version of the jukebox controller and drive firmware for the model and option of the jukebox you are upgrading/converting.

Firmware for all models and options of this jukebox is available for download at:

www.hp.com/isgupport/optical/fw/firmware.html.

Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Before You Begin

Before You Begin

Check the kit contents, tools and equipment needed for this upgrade in Chapter 1.

IMPORTANT

Before you begin, make sure you have the most current firmware for the jukebox controller and the drives for the model and option jukebox you are upgrading.

Firmware may be obtained at www.hp.com/isgsupport/optical/firmware.html.

A Guide to this Chapter

FIRST — Access the drive/electronics area using directions on page 2-3.

THEN:

- If you are upgrading drives, go to page 2-4
- If you are upgrading slot capacity, go to page 2-23.

Access the Drive /Electronics Area

WARNING

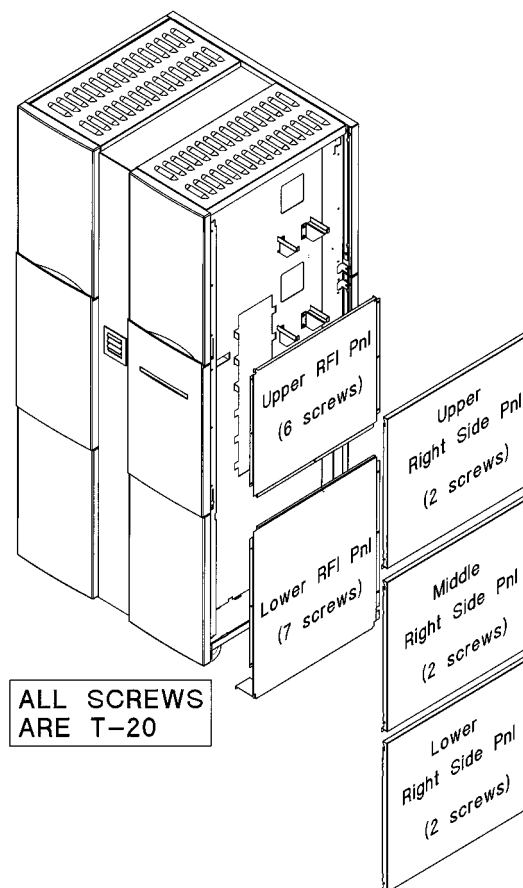
Disconnect the power cord before taking the jukebox apart to prevent possible electrical shock.

CAUTION

Do not switch off power to the jukebox until you are sure the SCSI bus is *inactive*. Switching off the jukebox when the SCSI bus is active can cause data loss and/or indeterminate bus states.

Figure 2-1

Access Panels



Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

NOTE

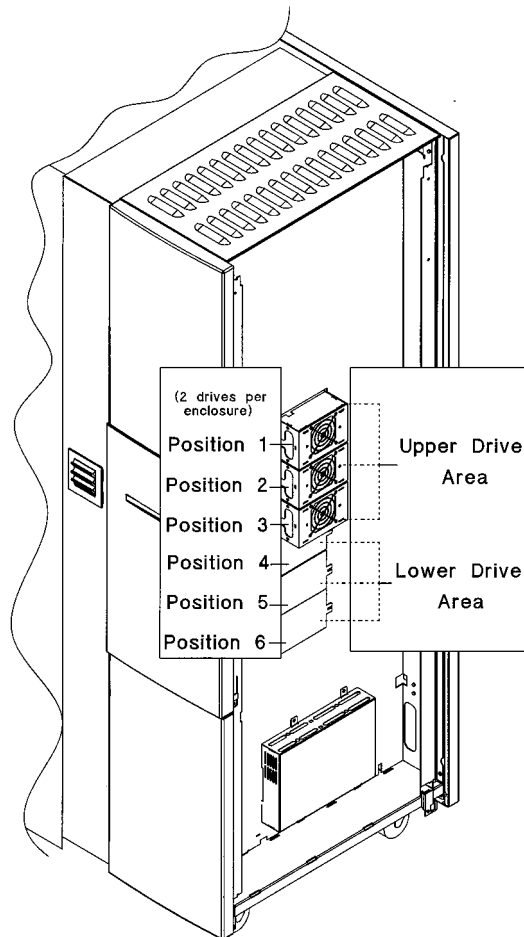
If you are upgrading the capacity on a four- or six-drive jukebox, go to “Upgrading Slot Capacity from 128 to 238 Slots In a Four- or Six-Drive Jukebox” on page 3-23.

Adding Two Drives (Upgrading a 4- Drive to a 6-Drive Jukebox - C1154J/K/L Kit)

1. Remove the empty drive enclosure at position #3 (see Figure 2-2).
 - a. Disconnect the drive fan power cable from the interposer PCA.
 - b. Remove the two T-20 screws that mount the drive enclosure to the chassis.

Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

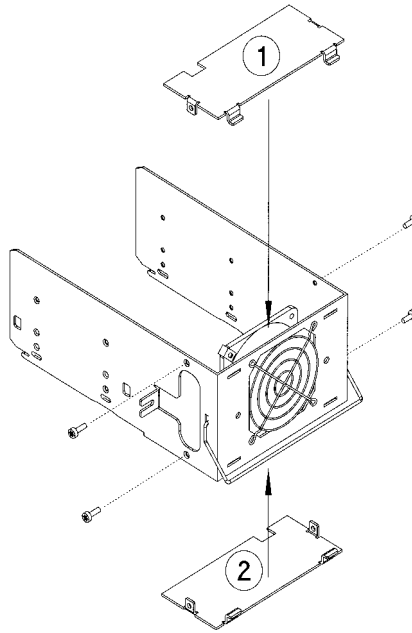
Figure 2-2 Drive and Drive Cover Plate Locations



2. Remove the top and bottom cover on the drive enclosure as shown in Figure 2-3.

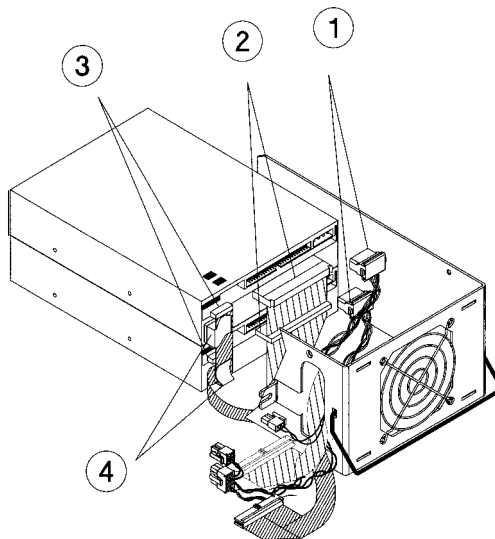
Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

Figure 2-3 **Top and Bottom Access Panels on the Drive Enclosure**



3. Route the drive cables for two drives into the enclosure as shown in Figure 2-4.

Figure 2-4 **Routing Cables to the Drives in the Enclosure**



Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

4. Mount the cable clip on the rear of both drives as shown in #4 of Figure 2-4.
5. Slide the *bottom* drive into the enclosure far enough to connect a set of drive cables to the drive as shown in #1, #2, and #3 on Figure 2-4.

As you connect the drive interface cable, slide the cable into the cable clip on the rear of the drive.

6. Slide the *top* drive into the enclosure far enough to connect a set of drive cables to the drive as shown in #1, #2, and #3 on Figure 2-4.

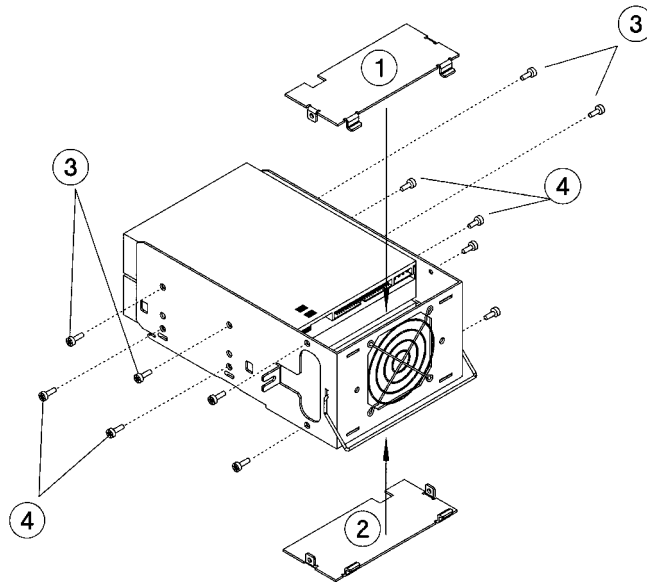
As you connect the drive interface cable, slide the cable into the cable clip on the rear of the drive.

7. Insert the T-10 screws to mount the drives (see screws labeled #3 and #4 on Figure 2-5).

Each drive uses four screws; two on each side.

Figure 2-5

Mounting the Drives Into the Drive Enclosure



8. Remount the top and bottom covers on the enclosure (see #1 and #2 on Figure 2-5)

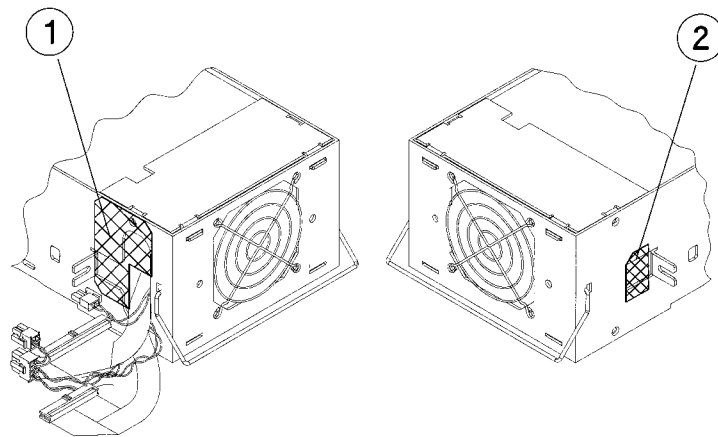
Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

9. Mount the air seals on the two sides of the enclosure as shown in Figure 2-6.

Mount an air seal on the left side of the enclosure to cover the remainder of the hole used by the cables.

Mount a smaller air seal on the hole on the right side of the enclosure.

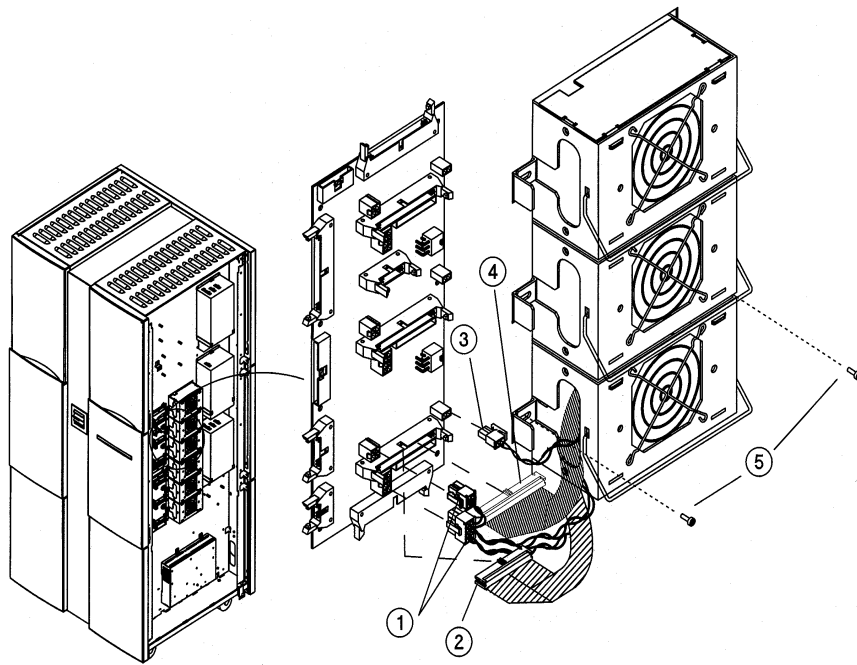
Figure 2-6 **Applying the Air Seals to the Drive Enclosure**



Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

10. Insert the drive enclosure into position #3 in the chassis and secure the enclosure with two T-20 screws on each side (see #5 on Figure 2-7).
 11. Connect the cables from the drives to the interposer PCA as shown in #1, #2, #3, and #4 on Figure 2-7.
- #1 - drive power cable (for both drives)
 - #2 - drive interface cable (split, one for each drive)
 - #3 - drive enclosure fan power cable
 - #4 - SCSI cable (to both drives)

Figure 2-7 **Connecting Drive Cables to the Interposer for Enclosure #3**



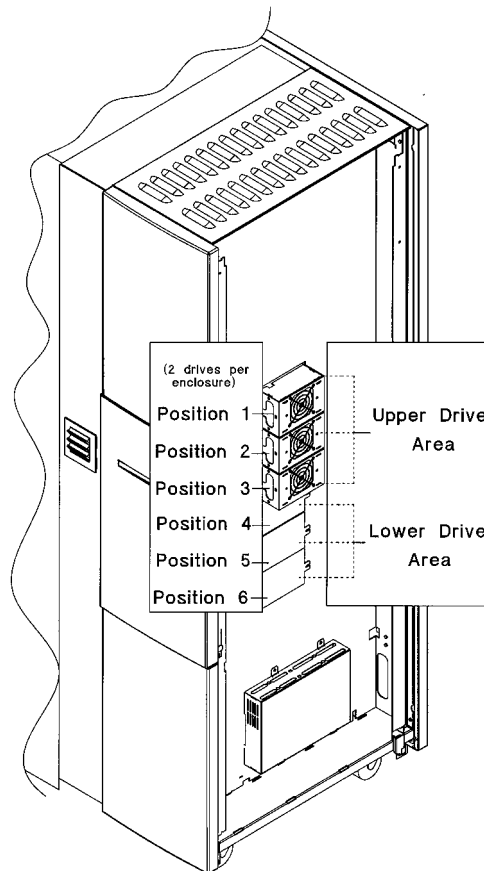
Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

**Adding Four Drives and Support Components
(Upgrading a 6-Drive to a 10-Drive Jukebox -
C1158J/K/L Kit)**

Step 1: Remove Drive Enclosure #3

1. Remove the three right-side panels and the upper and lower RFI panels (see Figure 2-1).

Figure 2-8 **Drive and Drive Cover Plate Locations**



Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes

Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

2. Remove all drive cables from the interposer PCA. for the drives in enclosure at position #3 (see Figure 2-12).
3. Remove the T-20 screws from each side of the drive enclosure. Remove the drive enclosure from the chassis (see #5 on Figure 2-12).

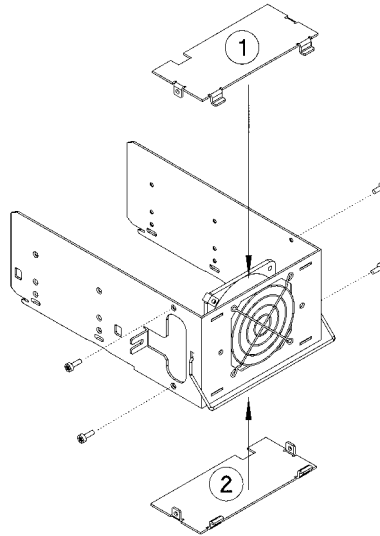
Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

Step 2: Mount Four Drives in Two Enclosures From the Kit

1. Remove the top and bottom cover on the enclosure as shown in Figure 2-9.

Figure 2-9

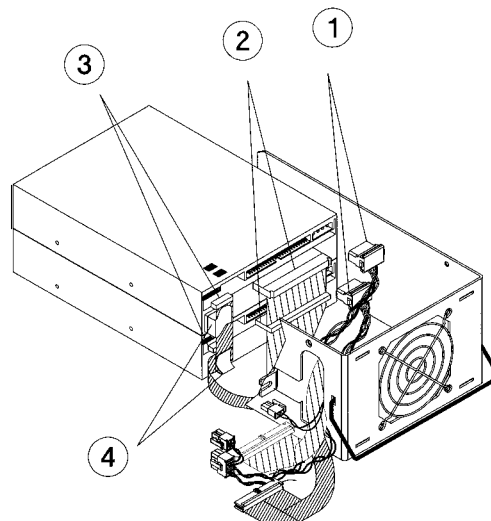
Top and Bottom Access Panels on the Drive Enclosure



2. Route the drive cables for two drives into the enclosure as shown in Figure 2-10.

Figure 2-10

Routing Cables to the Drives in the Enclosure



Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

3. Slide the *bottom* drive into the enclosure far enough to connect a set of drive cables to the drive as shown in #1, #2, and #3 on Figure 2-10.

As you connect the drive interface cable, slide the cable into the cable clip on the rear of the drive.

4. Slide the *top* drive into the enclosure far enough to connect a set of drive cables to the drive as shown in #1, #2, and #3 on Figure 2-10.

As you connect the drive interface cable, slide the cable into the cable clip on the rear of the drive.

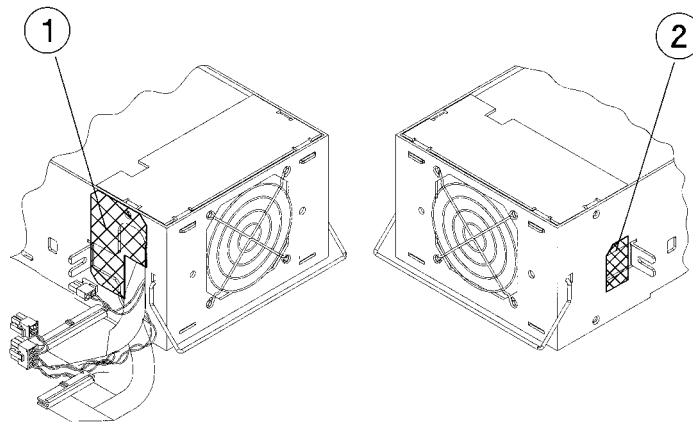
5. Mount the cable clip on the rear of both drives as shown in Figure 2-10.
6. Insert the T-10 screws to mount the drives (see Figure 2-9).

Each drive uses four screws; two on each side.

7. Remount the top and bottom covers on the enclosure (see Figure 2-9)
8. Mount the plastic air seal over the top portion of the cable access hole as shown in #1 on Figure 2-11.

Mount a small portion of the plastic over the hole on the right side of the enclosure as shown in #2 on Figure 2-11

Figure 2-11 **Applying the Air Seals to the Drive Enclosure**



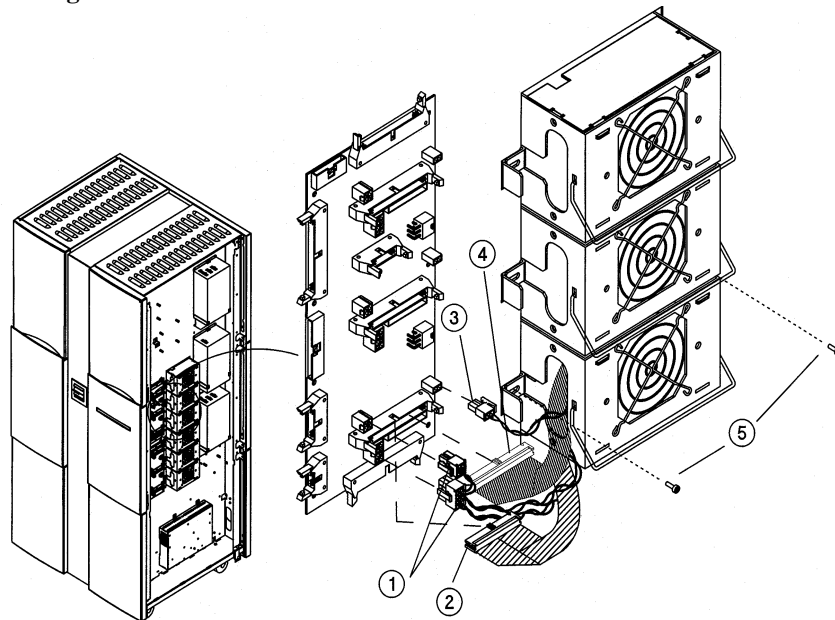
Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

Step 3: Mount the Three Drive Enclosures (With Drives) in the Lower Drive Area

1. Remove the cover plates for drive positions #4, #5, and #6 (see Figure 2-8).
Remove the two T-20 screws on each plate.
2. Insert the three enclosures into the three open drive mount locations in the lower drive area.
3. Secure the enclosures with two T-20 screws on each side.
4. Connect the cables from the all drive enclosures to the interposer PCA.
 - #1 - drive power cable (for both drives)
 - #2 - drive interface cable (split, one for each drive)
 - #3 - drive enclosure fan power cable
 - #4 - SCSI cable (to both drives)

Figure 2-12

Removing Drive Enclosure at Position #3

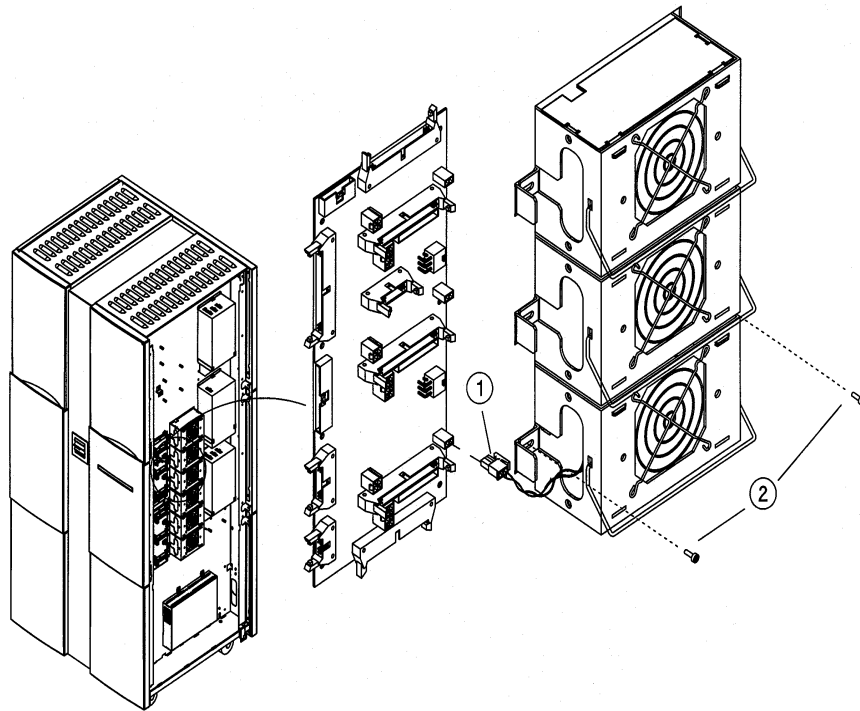


Step 4: Mount the Empty Drive Enclosure (From Kit) Into Position #3

1. Insert drive enclosure into position #3.
2. Mount the enclosure to the chassis by two T-20 screws (see #2 on Figure 2-13).
3. Connect the fan power cable to the interposer PCA (see #1 on Figure 2-13).

Figure 2-13

Mounting the Empty Drive Enclosure Into Position #3



Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

Step 5: Install a Lower Interposer PCA and a 5/12 V Power Supply

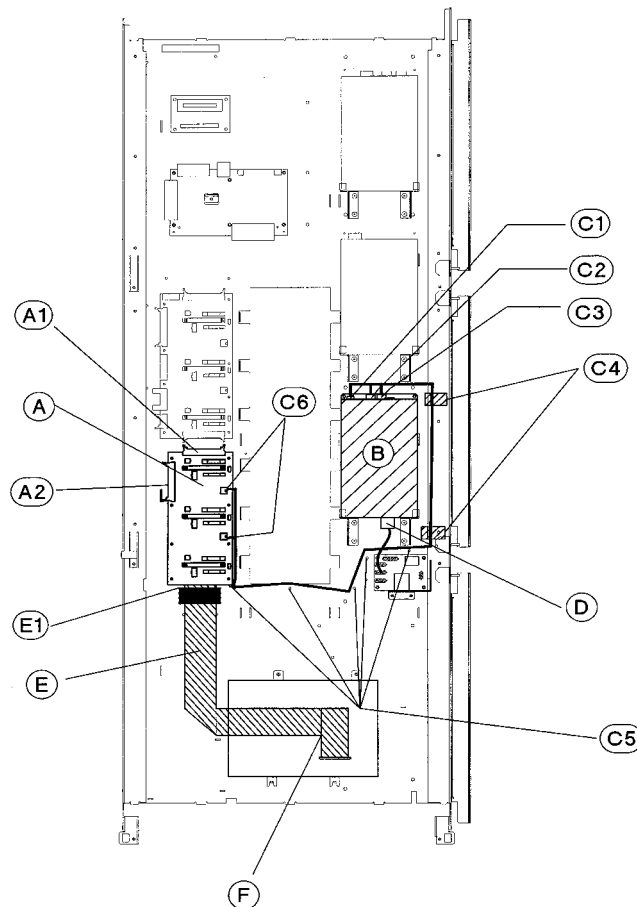
Mount the Lower Interface PCA

1. Connect the SCSI cable from the kit to the top of the lower interposer PCA from the kit.

The SCSI cable is shown as “E” on Figure 2-14 and passes behind the lower interposer PCA to connect at the top (shown by “A1” on Figure 2-14).

Figure 2-14

Adding a Lower Interposer PCA and Second 5/12 V Power Supply



Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

2. Mount the interposer PCA (“A”) to the chassis below the upper interposer PCA as shown.

Eight T-20 screws mount the interposer PCA.

3. Connect the GPIO cable connection at “A2” on Figure 2-14.

NOTE

In the next steps note the position of the thin, flat cable clamps on the existing SCSI cable. These clamps must be replaced on top of both SCSI cables.

As an additional reference for the position of the various clamps, refer to the Figure “Installing RFI Clamps and Cable Clamps” on page 3-29.

NOTE

In the next step you will be attaching another RFI clamp on the top of this existing clamp. The final position of this cluster of clamps must be as close to the bottom of the lower interposer PCA as possible.

Ensure that the RFI clamp on the existing cable that is used by the upper interposer PCA is as close to the bottom of the lower interposer PCA as possible (see “E1” on Figure 2-14).

4. Mount the RFI clamp around the new SCSI cable (“E”) and stick this new RFI clamp *on top of the existing clamp*.

Mount a 5/12 V Power Supply

1. Place the power supply (“B”) on the lower power supply pedestal as shown in Figure 2-14. Secure the top of the power supply with two T-20 screws.
2. Connect the power cable connectors at “C1,” “C2,” and “C3” on the top of the power supply.
“C1” is the connector on the left nearest the chassis wall. Connectors “C2” and “C3” are the two right-most connectors.
3. Route and clip the power supply cable from the lower power supply as follows:
 - a. Route the cable along the right side of the power supply through clips “C4.”
 - b. Route the cable across the jukebox and insert the cable snap clips on the cable into the five locations shown by “C5.” secure with clips “C5.”
 - c. Route the cable up the right side of the lower interposer PCA and connect to connectors “C6” on the interposer PCA.

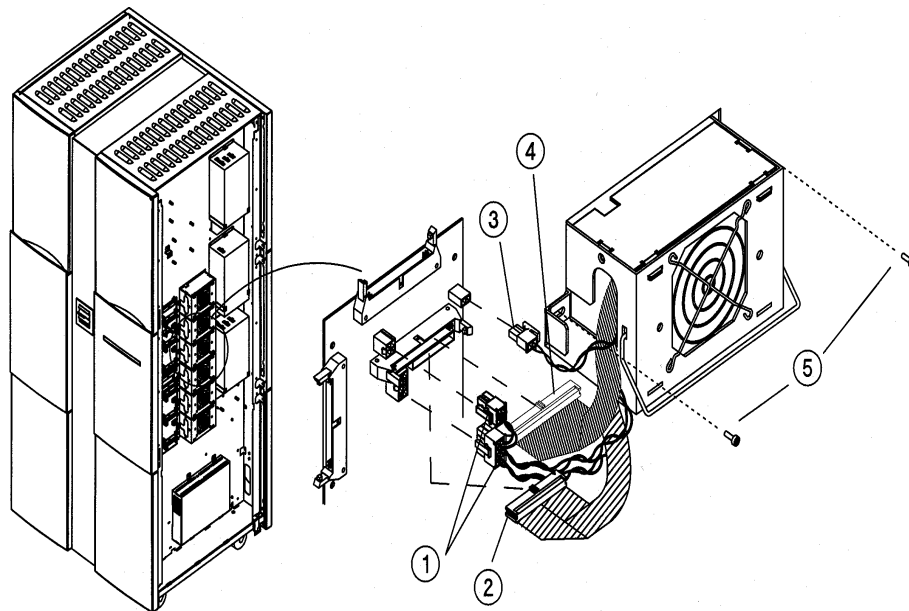
Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

4. Connect the short cable (“D”) from the bottom of the power supply to the power distribution assembly.

Step 6: Connect All Drive Cables From Lower Drive Area Enclosures to the Lower Interposer PCA.

1. Connect the drives in the lower drive area to the lower interposer PCA as shown in Figure 2-15.
 - #1 - drive power cable (for both drives)
 - #2 - drive interface cable (split, one for each drive)
 - #3 - drive enclosure fan power cable
 - #4 - SCSI cable (to both drives)

Figure 2-15 **Connecting Drive Cables to the Lower Interposer PCA (Position #4 Shown)**

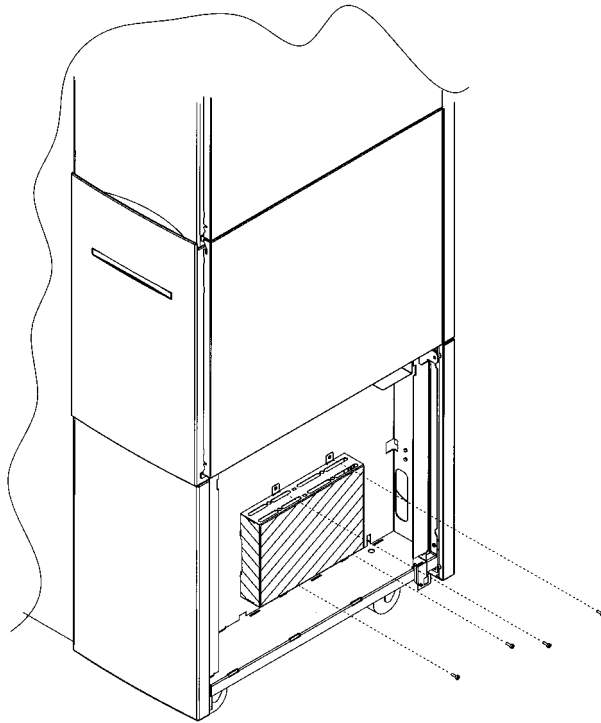


Step 7: Install a Second SCSI Interface PCA

1. Remove the four T-20 screws that mount the SCSI interface assembly as shown in Figure 2-16.

Figure 2-16

Removing the SCSI Interface Assembly



Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes

Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

IMPORTANT

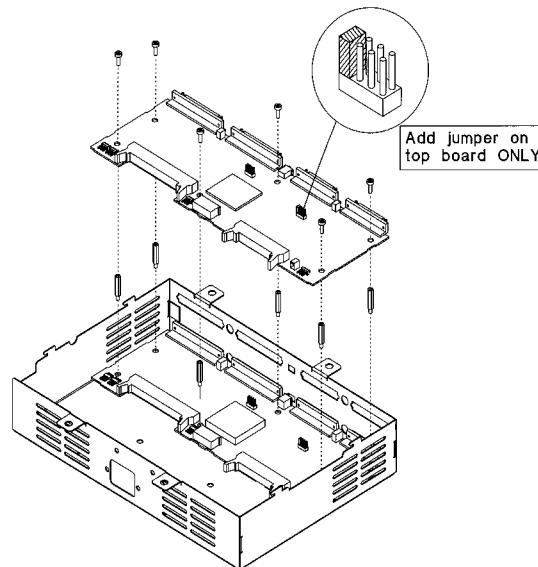
A label on the top of the interface assembly covers the holes that will be used by the port connectors on the additional SCSI interface PCA.

Remove the label before installing the additional SCSI PCA. *Make sure that the holes are clear of adhesive residue*

2. Add the SCSI interface PCA from the kit to the interface assembly as shown in Figure 2-17.
 - a. Remove the six T-20 screws that mount the existing PCA.
 - b. Insert and tighten six standoffs where the screws were located.
 - c. Mount the second PCA on top of the standoffs with six T-15 screws (either the ones just removed or the ones in the kit).
 - d. *Add the jumper as shown in the inset on Figure 2-17.*

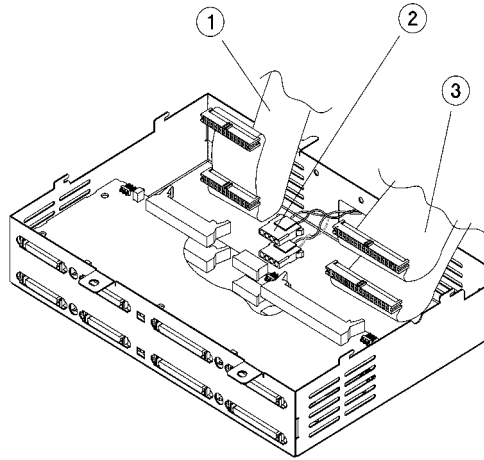
Use the six standoffs and screws as shown. *Apply the jumper as shown.*

Figure 2-17 Adding a SCSI Interface PCA



Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

Figure 2-18 **Connecting Cables on Two SCSI Interface PCAs**



3. Connect the cables as shown in Figure 2-18.
 - #1 - drive interface cable
 - #2 - power cables (two connectors)
 - #3 - SCSI cables (top cable in the diagram is the one just installed)

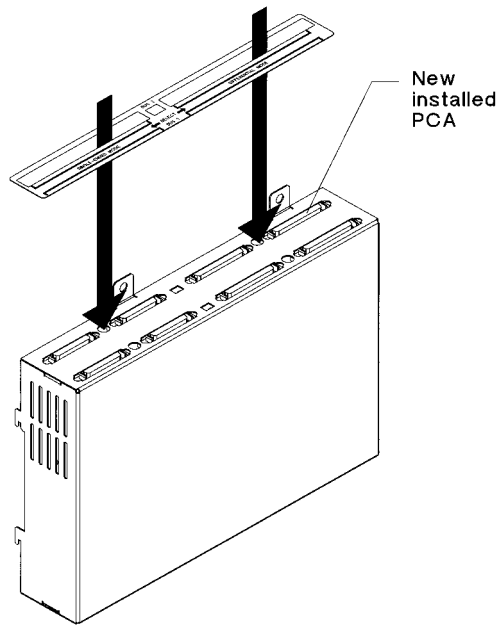
CAUTION

Take care that you do not pinch the SCSI cables on the edge of the SCSI assembly enclosure as you mount the assembly on the side of the chassis in the next step.

4. Remount the SCSI interface assembly on the chassis with four T-20 screws.
5. Attach the SCSI interface assembly label for two interface PCAs (see

Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes
Upgrading Drives (C1154J/K/L, C1158J/K/L Kits)

Figure 2-19 Attaching SCSI Interface Label



Step 8: Install the Slot/Drive Map

1. Remove the lower and middle panels on the left side of the jukebox (see Figure 3-1).
2. Place the replacement drive map label over the previous label.
The drive map label is located on the inside of the left middle access panel.
3. Go to Chapter 4, “Checking/Downloading Firmware.”

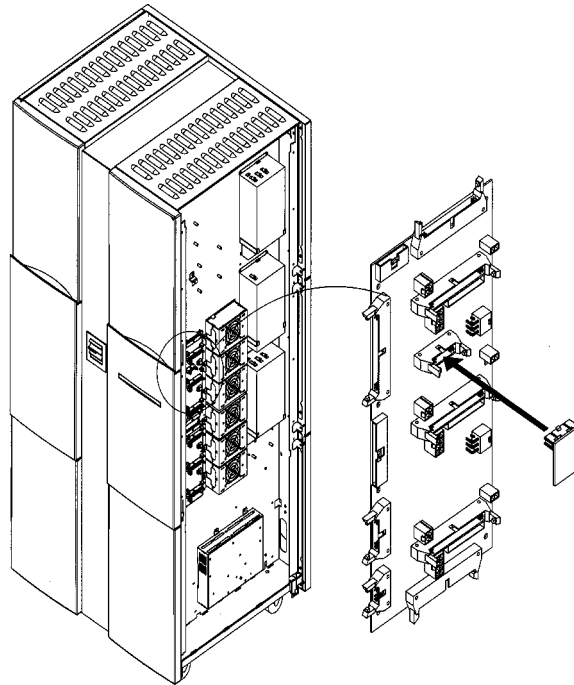
Upgrading Slot Capacity from 128 to 238 Slots In a Four- or Six-Drive Jukebox

(C1159J/K/L Kit)

1. Insert the configuration module into the connector on the upper interposer PCA as shown in the figure below.

Figure 2-20

Mounting the Configuration Module



NOTE

Inserting the configuration module is all that is necessary to activate all 238 slots. The new slots will be recognized when power is turned on.

2. Go to Chapter 4, "Checking/Downloading Firmware."

Upgrading Drives and Capacity in 5.2-Gb Drive Jukeboxes

Upgrading Slot Capacity from 128 to 238 Slots In a Four- or Six-Drive Jukebox

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
Before You Begin

Before You Begin

Check the kit contents, tools and equipment needed for this conversion in Chapter 1

IMPORTANT

Before you begin, make sure you have the most current firmware for the jukebox controller and the drives for the model and option jukebox you are converting.

Firmware may be obtained at www.hp.com/isgsupport/optical/fw/firmware.html.

A Guide to this Chapter

FIRST — Record the current configurations and access the working area using directions on pages 33-3 and 3-4.

THEN:

- If you are using kits C5138J/K/L C1154J/K/L go to page 3-5.
- If you are using kits C5139J/K/L and C1154J/K/L go to page 3-17.

Record Configurations

1. If jukebox is not on, turn it on.
2. Ensure that there is no disks in the drives.

Execute `EMPTY DRIVES` from the control panel `TEST * menu`, if necessary.

IMPORTANT

Record the jukebox configuration settings so that the settings may be restored after the conversion.

3. Record the jukebox configuration settings using the `CONF * menu`.

RECORD THE SETTINGS IN THE TABLE ON PAGE 5-4. You may want to refer to this information after the conversion.

CAUTION

Do not switch off power to the jukebox until you are sure the SCSI bus is *inactive*. Switching off the jukebox when the SCSI bus is active can cause data loss and/or indeterminate bus states.

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
Access the Working Areas

Access the Working Areas

WARNING

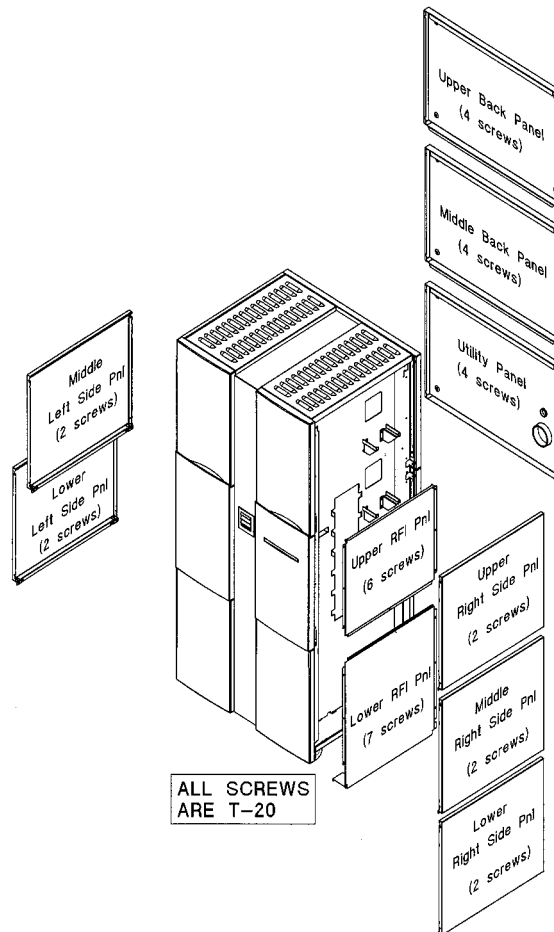
Disconnect the power cord before taking the jukebox apart to prevent possible electrical shock.

CAUTION

Do not switch off power to the jukebox until you are sure the SCSI bus is *inactive*. Switching off the jukebox when the SCSI bus is active can cause data loss and/or indeterminate bus states.

Figure 3-1

Access Panels



Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes Using 5.2-GByte Drives

Converting a 4- or 6-Drive (2.6 Gb), *128-Slot* Jukebox to a 4- or 6-Drive (5.2 Gb), *128-Slot* Jukebox (C5138J/K/L and C1154J/K/L Kits)

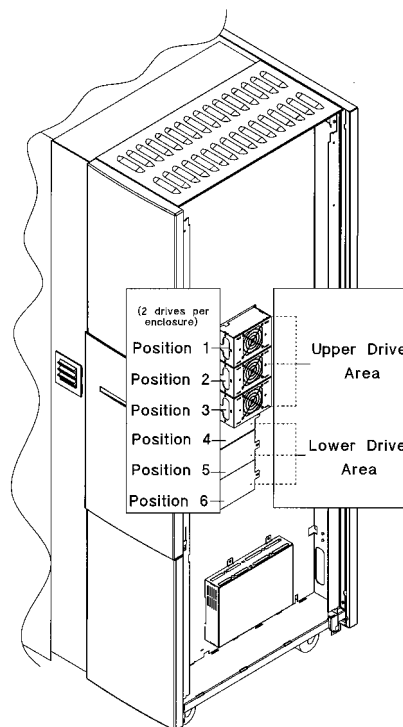
Step 1: Convert Drives in Positions #1 and #2 to 5.2 Gbyte (C5138J/K/L/ Kit)

NOTE

If you will be converting a 6-drive jukebox, you will also be using kit C1154J/K/L.

Figure 3-2

Drives and Drive Cover Plate Locations

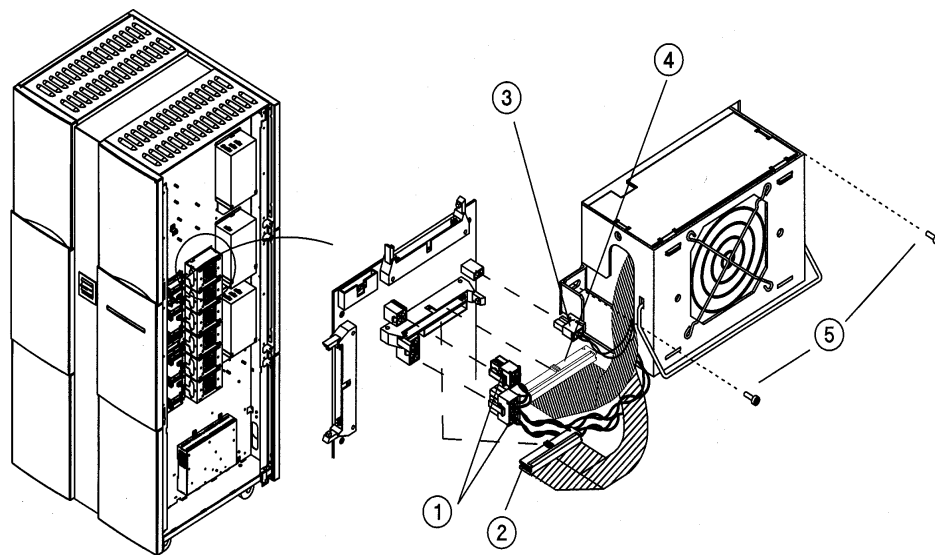


Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes

Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes Using 5.2-GByte Drives

1. Disconnect all drive cables for the drive enclosures you are converting (Figure 3-3 uses drives at position #1 as an example).
2. Remove the T-20 screws from each side of the drive enclosure. Remove the drive enclosure from the chassis (see #5 on Figure 3-3).

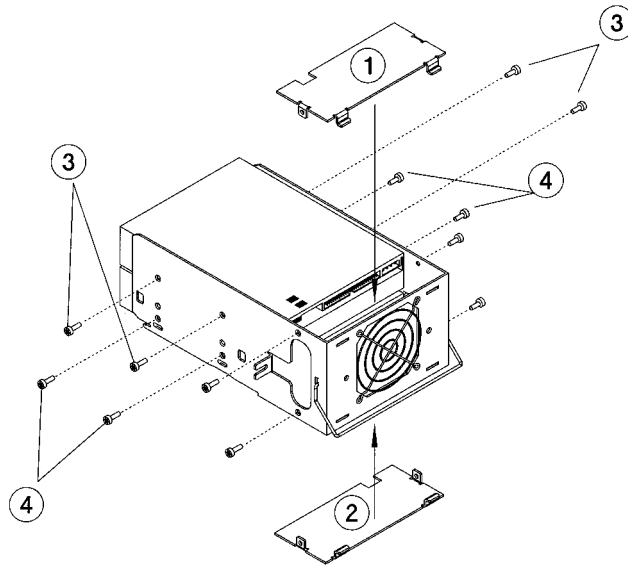
Figure 3-3 **Removing the Cables and Screws**



3. Remove the four T-10 screws holding the top and bottom access plates on the drive enclosure (see #1 and #2 in Figure 3-4). Remove the plates.
4. Remove the four T-10 screws that hold the drives in the drive enclosure and slide the drive forward a small amount to give you room to remove the cables. (#3 screws on Figure 3-4 hold the upper drive, #4 screws hold the lower drive.)

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

Figure 3-4 **Unmounting Drives From the Enclosure**



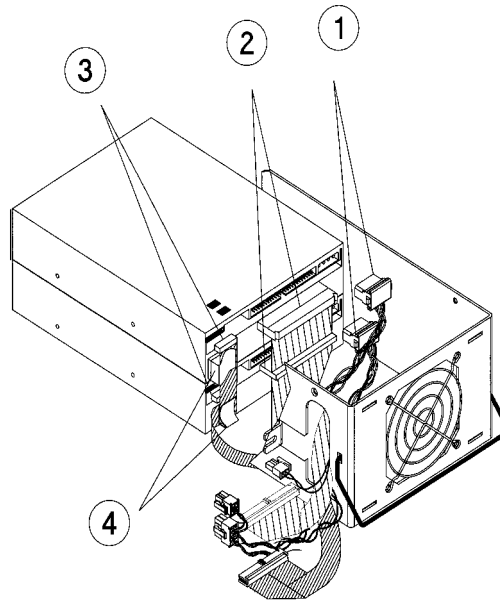
5. Remove the drive cables from the rear of the drives (see Figure 3-5).
6. Slide the drives out of the enclosure.

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes

Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes Using 5.2-GByte Drives

Figure 3-5

Drive Cables



7. Use the drive cables from the kit and route the cables for two drives into the enclosure as shown in Figure 3-5.

- #1 - drive power cables
- #2 - SCSI cable
- #3 - drive interface cables

8. Mount the cable clip on the rear of both drives as shown in #4 of Figure 3-5.
9. Slide the *bottom* drive into the enclosure far enough to connect a set of drive cables to the drive as shown in #1, #2, and #3 on Figure 3-5.

As you connect the drive interface cable, slide the cable into the cable clip on the rear of the drive.

10. Slide the *top* drive into the enclosure far enough to connect a set of drive cables to the drive as shown in #1, #2, and #3 on Figure 3-5.

As you connect the drive interface cable, slide the cable into the cable clip on the rear of the drive.

11. Insert the T-10 screws to mount the drives (see Figure 3-4).

Each drive uses four screws; two on each side.

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

12. Remount the top and bottom covers on the enclosure (see #1 and #2 on Figure 3-4).

13. Insert all drive enclosures into the chassis.

14. Next step:

If converting a four-drive jukebox, this completes the drive conversion. *Go to “Step 2: Replace the Upper and Lower Interposer PCAs” on page 3-21 and complete the steps for replacing the UPPER interposer PCA.*

If converting a six-drive jukebox, use kit C1154J/K/L to convert two more drives (total of six) in the next procedure “*Converting Drives in Position #3 to 5.2-Gbyte Drives.*”

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes

Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes Using 5.2-GByte Drives

**Step 2: Convert Drives in Position #3 to 5.2-Gbyte Drives
(Converting a Six-Drive Jukebox - C1154J/K/L Kit)**

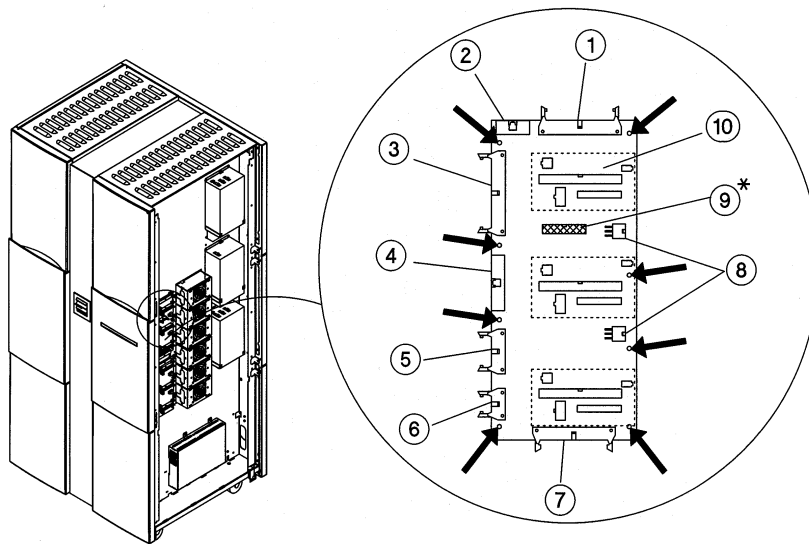
1. Complete all steps under the preceding section, “Convert Drives in Positions #1 and #2 to 5.2 Gbyte” to remove and replace the drives in enclosure position #3.
2. *Go to “Step 3: Replace the Upper Interposer PCA” on page 3-11 and complete the steps to replace the UPPER interposer PCA.*

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

Step 3: Replace the Upper Interposer PCA

1. Disconnect all cables to the upper interposer PCA. See Figure 3-6.

Figure 3-6 Replacing the Upper Interposer PCA



2. Remove the eight T-20 screws holding the PCA to the chassis (see arrows on Figure 3-6). Remove the PCA.
3. Mount the upper interposer PCA from the kit with the eight T-20 screws.
4. Connect the cables to the interposer PCA (see Figure 3-6).
 - #1 - SCSI cable
 - #2 - vertical-path-clear transmitter
 - #3 - GPIO cable
 - #4 - mailslot sensor / motor cable
 - #5 - control panel input/output
 - #6 - vertical-path-clear receiver
 - #7 - SCSI cable
 - #8 - drive power input to interposer PCA

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

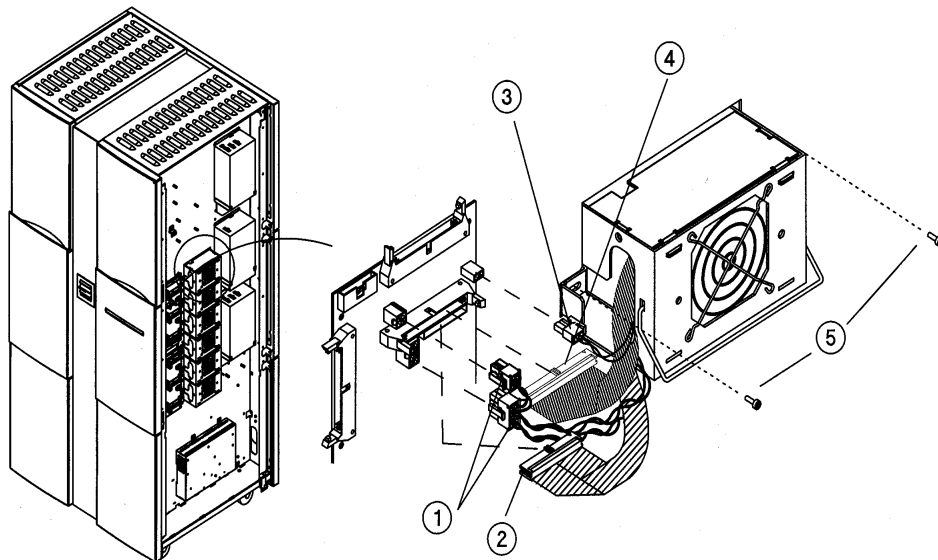
- #9 - configuration module (not applicable)
- #10 - drive cables (see the next procedure and Figure 3-7)

Step 4: Connect All Drive Cables to the Interposer PCA

Connect the cables from the drives to the interposer PCA as shown in Figure 3-7.

- #1 - drive power cable (for both drives)
- #2 - drive interface cable (split, one for each drive)
- #3 - drive enclosure fan power cable
- #4 - SCSI cable (to both drives)

Figure 3-7 **Connecting Drive Cables to the Interposer (Position #1 Shown)**



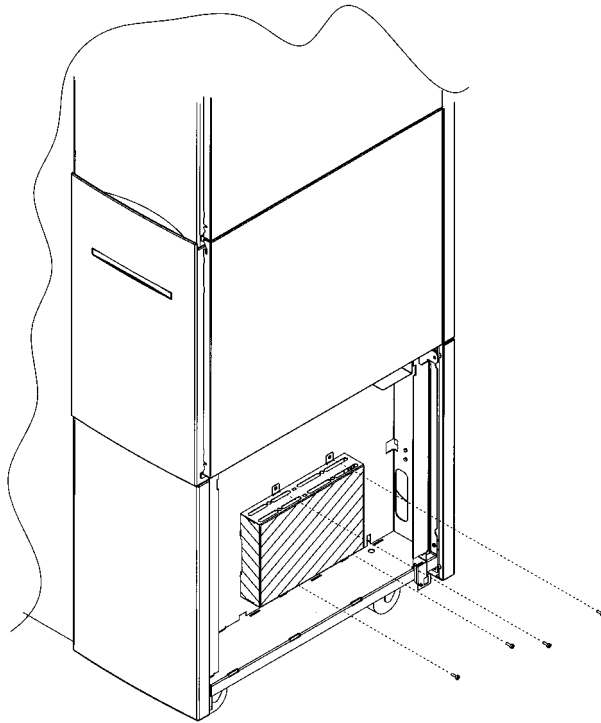
Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

Step 5: Replace the SCSI Interface PCA

1. Remove the four T-20 screws that mount the SCSI interface assembly as shown in Figure 3-8

Figure 3-8

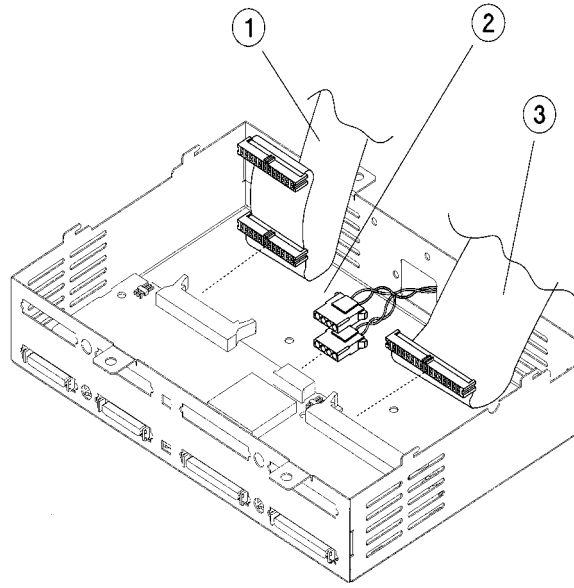
Removing the SCSI Interface Assembly



2. Disconnect the SCSI, GPIO, and power cables from the SCSI interface PCA.
3. Remove the six T-20 screws that mount the PCA. Remove the PCA.
4. Mount the replacement interface PCA.
5. Connect the SCSI, GPIO, and power cables.
 - #1 - drive interface cable
 - #2 - power cables (use either one)
 - #3 - SCSI cable

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

Figure 3-9 **Removing and Replacing a Single SCSI Interface PCA**



CAUTION

Take care that you do not pinch the SCSI cables on the edge of the SCSI assembly enclosure as you mount the assembly on the side of the chassis in the next step.

6. Remount the SCSI interface assembly on the chassis with four T-20 screws.

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

Step 6: Install Additional Slots

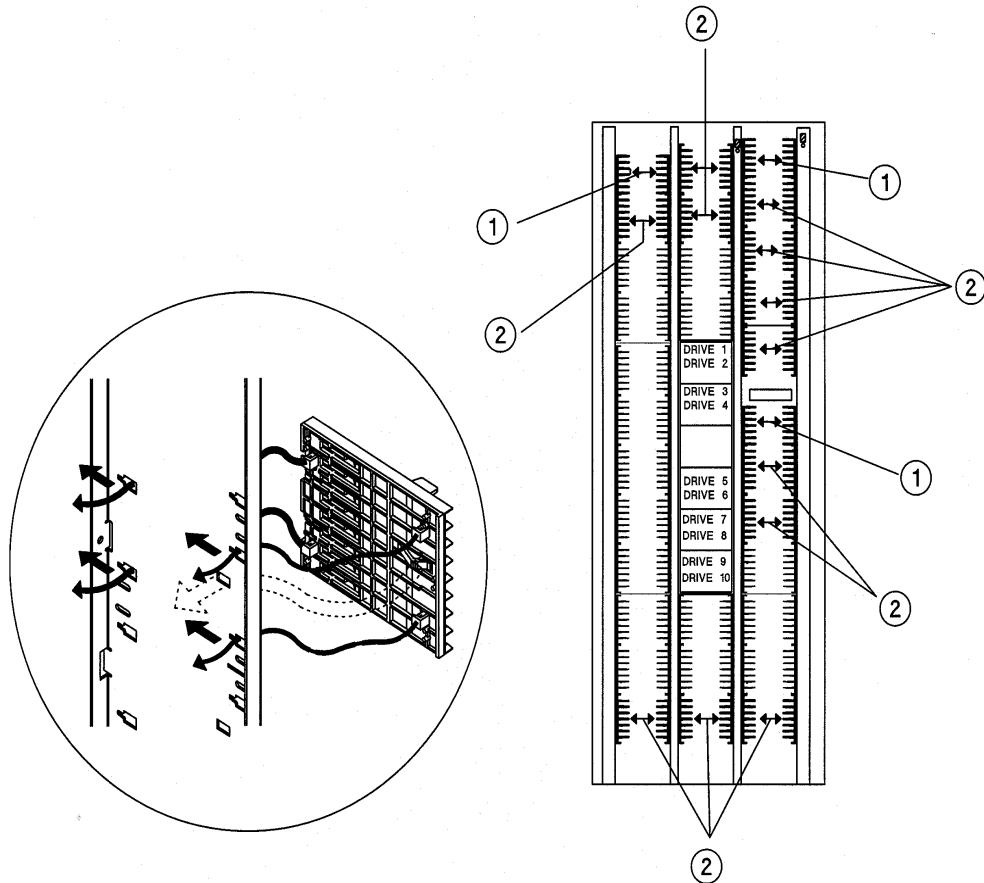
Insert magazines into the locations shown on Figure 3-10

- #1 - 6-slot magazines
- #2 - 8-slot magazines

Place the magazine against the side wall, insert the four magazine tabs into the four receiver holes. Push the magazine both against the wall and forward at the same time until you hear the clip “snap.”

Figure 3-10

Installing Additional Slots Into the Stacks



Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes

**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

Step 7: Install the Slot/Drive Map

1. Place the replacement drive map label over the previous label.

The drive map label is located on the inside of the left middle access panel (see Figure 3-1).

2. Go to “*Step 7: Install RFI Modifications*” on page 3-29.

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives

**Converting a 6-, 8-, 10-, or 12-Drive (2.6 Gb), 238-Slot
Jukebox to a 4-, 6-, or 10-Drive (5.2 Gb), 238-Slot
Jukebox
(C5139J/K/L and C1154J/K/L Kits)**

Step 1: Install Four Drives

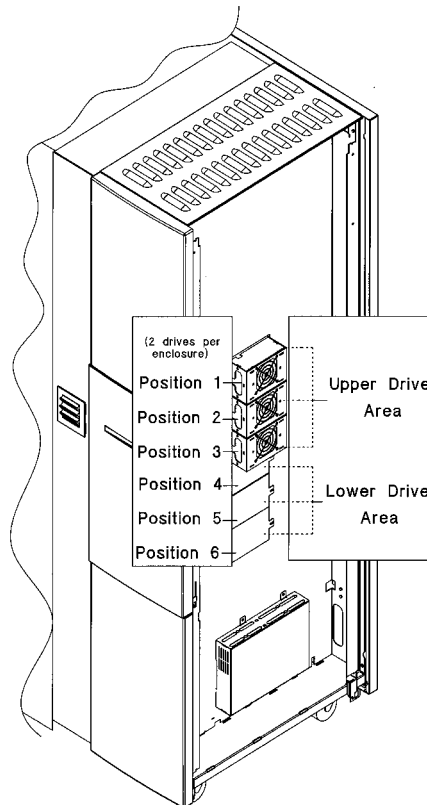
NOTE

If six drives will be converted in the jukebox, the two-drive kit, C1154J/K/L must also be used.

If more than six drives will be converted in the jukebox, the four-drive C1158J/K/L kit must also be used.

Figure 3-11

Drives and Drive Cover Plate Locations

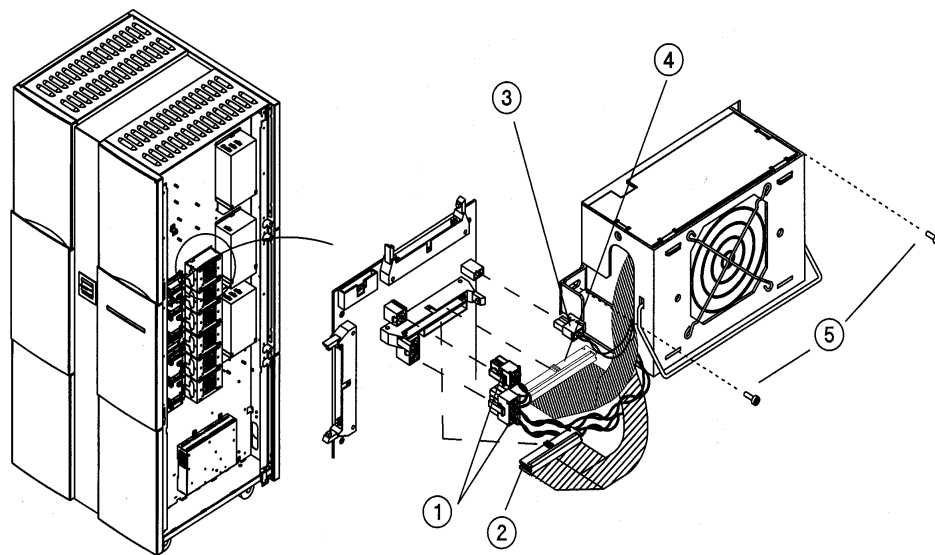


Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes

Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes Using 5.2-GByte Drives

1. Disconnect all drive cables for the drive enclosures you are converting (Figure 3-12 uses drives at position #1 as an example).
2. Remove the T-20 screws from each side of the drive enclosure. Remove the drive enclosure from the chassis (see #5 on Figure 3-12).

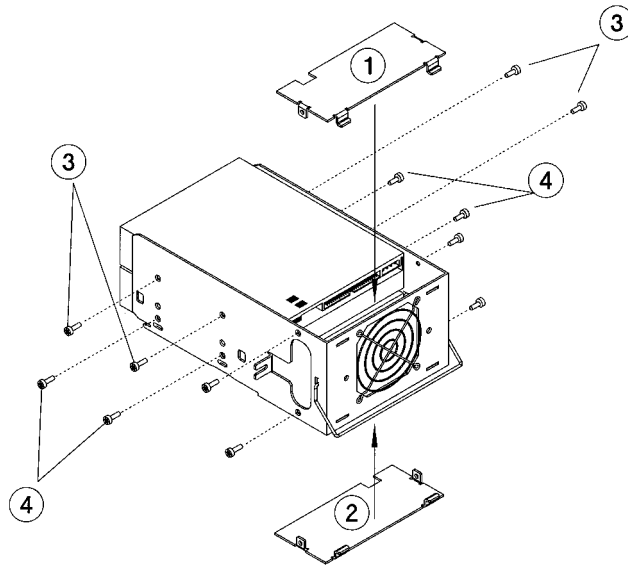
Figure 3-12 **Removing the Cables and Screws**



3. Remove the four T-10 screws holding the top and bottom access plates on the drive enclosure (see #1 and #2 in Figure 3-13). Remove the plates.
4. Remove the four T-10 screws that hold the drives in the drive enclosure and slide the drive forward a small amount to give you room to remove the cables. (#3 screws on Figure 3-13 hold the upper drive, #4 screws hold the lower drive.)

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

Figure 3-13 **Unmounting Drives From the Enclosure**

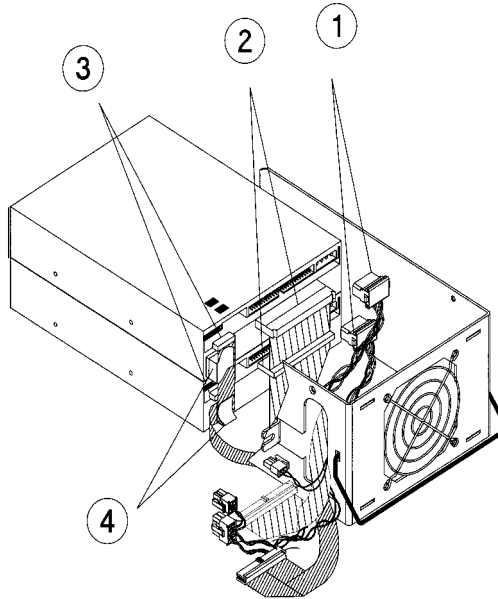


5. Remove the drive cables from the rear of the drives (see Figure 3-14).
 - #1 - drive power cables
 - #2 - SCSI cable
 - #3 - drive interface cables
6. Slide the drives out of the enclosure.

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes

Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes Using 5.2-GByte Drives

Figure 3-14 **Removing Cables From a Drive**



7. Use the drive cables from the kit and route the cables for the two drives into the enclosure as shown in Figure 3-14.

8. Mount the cable clip on the rear of both drives as shown in #4 of Figure 3-14.

9. Slide the *bottom* drive into the enclosure far enough to connect a set of drive cables to the drive as shown in #1, #2, and #3 on Figure 3-14.

As you connect the drive interface cable, slide the cable into the cable clip on the rear of the drive.

10. Slide the *top* drive into the enclosure far enough to connect a set of drive cables to the drive as shown in #1, #2, and #3 on Figure 3-14.

As you connect the drive interface cable, slide the cable into the cable clip on the rear of the drive.

11. Insert the T-10 screws to mount the drives (see Figure 3-13).

Each drive uses four screws; two on each side.

12. Remount the top and bottom covers on the enclosure (see #1 and #2 on Figure 3-13)

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

Step 2: Replace the Upper and Lower Interposer PCAs

NOTE

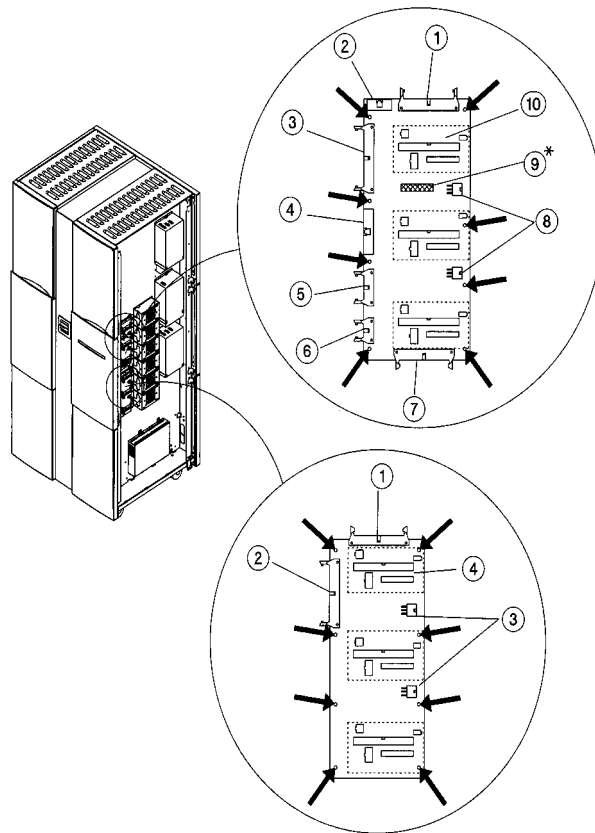
If converting a jukebox up to a maximum of six drives, only the upper interposer PCA is replaced.

If 10 drives will be installed in the conversion, both upper and lower interposer PCAs will be replaced.

1. Disconnect all cables to the upper and lower interposer PCAs or only the upper interposer PCA, depending on the conversion procedure you are doing. See Figure 3-15.

Figure 3-15

Disconnecting Cables and Screws on the Interposer PCAs



Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes

Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes Using 5.2-GByte Drives

2. Remove the eight T-20 screws holding the PCA to the chassis (see arrows on Figure 3-15).
3. Remove the upper interposer PCA (and lower interposer PCA if applicable).
4. Mount the replacement interposer PCAs from the kit and connect the cables (see Figure 3-15).

Upper interposer PCA:

- #1 - SCSI cable
- #2 - vertical-path-clear transmitter
- #3 - GPIO cable
- #4 - mailslot sensor / motor cable
- #5 - control panel input/output
- #6 - vertical-path-clear receiver
- #7 - SCSI cable
- #8 - drive power input to interposer PCA
- #9 - configuration module (will do in “Step 4: Installing the Configuration Module”)
- #10 - drive cables (will do in the following procedure “Step 3: Connect Drive Cables to the Interposer PCAs”)

Lower interposer PCA:

- #1 - SCSI cable
- #2 - GPIO cable
- #3 - drive power input to interposer PCA
- #4 - drive cables (will do in the following procedure “Step 3: Connect Drive Cables to the Interposer PCAs”)

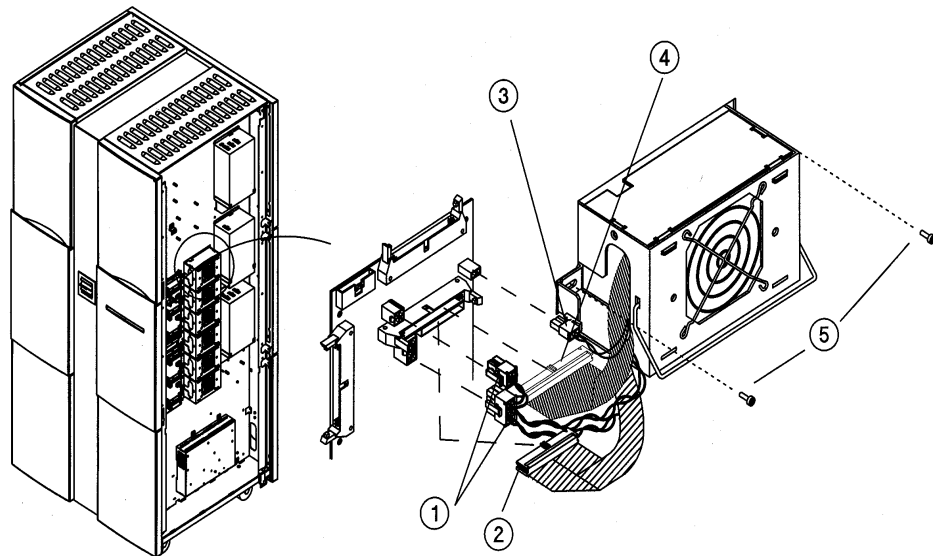
Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

Step 3: Connect Drive Cables to the Interposer PCAs

Connect all drive cables for all installed drives as shown in Figure 3-16

- #1 - drive power cable (for both drives)
- #2 - drive interface cable (split, one for each drive)
- #3 - drive enclosure fan power cable
- #4 - SCSI cable (to both drives)

Figure 3-16 **Connecting Drive Cables to the Interposer (Position #1 Shown as Example)**



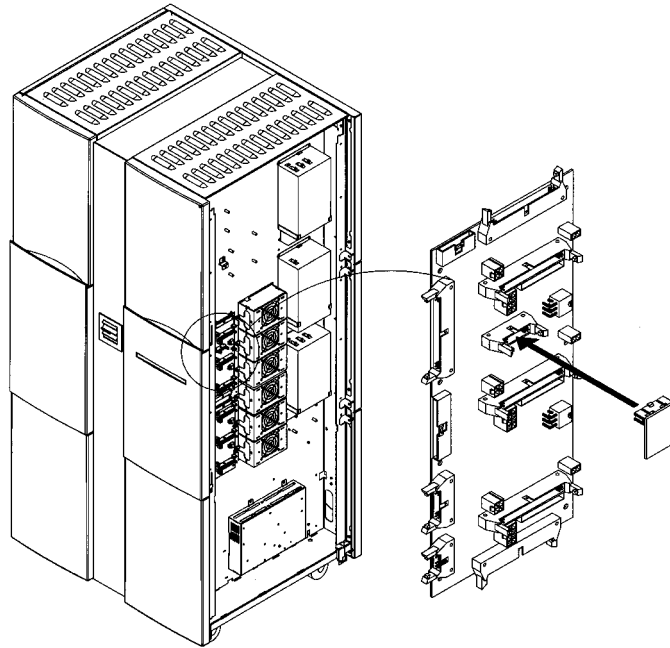
Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

Step 4: Install the Configuration Module

Insert the configuration module into connector as shown in Figure 3-17 below. This connector is #9 on Figure 3-15.

Figure 3-17

Inserting the Configuration Module



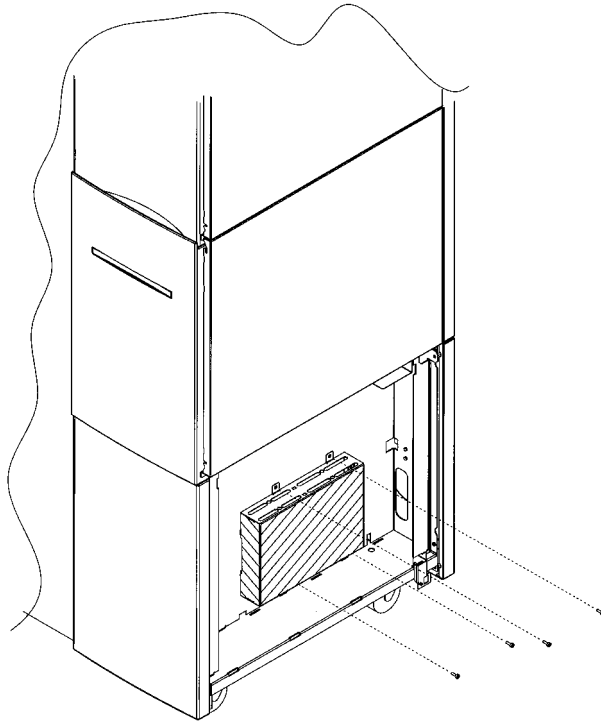
Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

**Step 5: Replace the Two SCSI Interface PCAs in the Interface
Assembly**

1. Remove the four T-20 screws that mount the SCSI interface assembly as shown in Figure 3-18.

Figure 3-18

Removing the SCSI Interface Assembly



Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

2. Remove and replace the two SCSI interface PCAs.

Note the jumper placed on the top PCA (shown in the inset on Figure 3-19).

Figure 3-19

Adding a SCSI Interface PCA

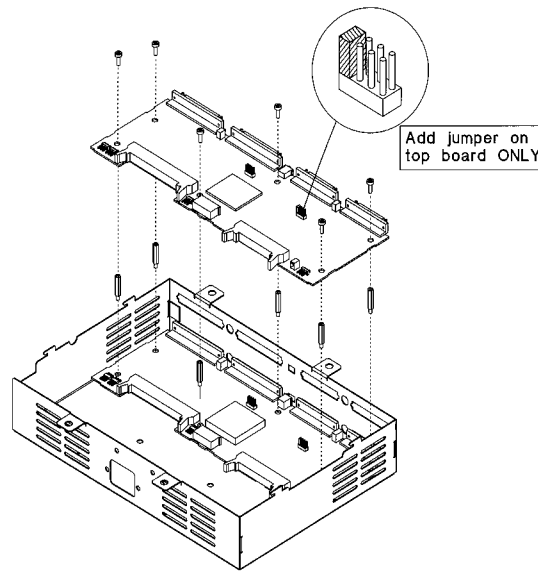
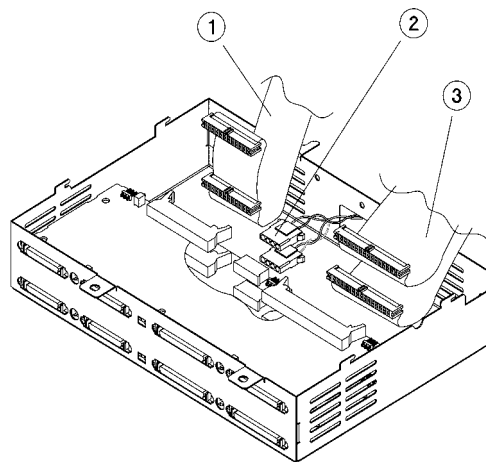


Figure 3-20

Connecting Cables on Two SCSI Interface PCAs



Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

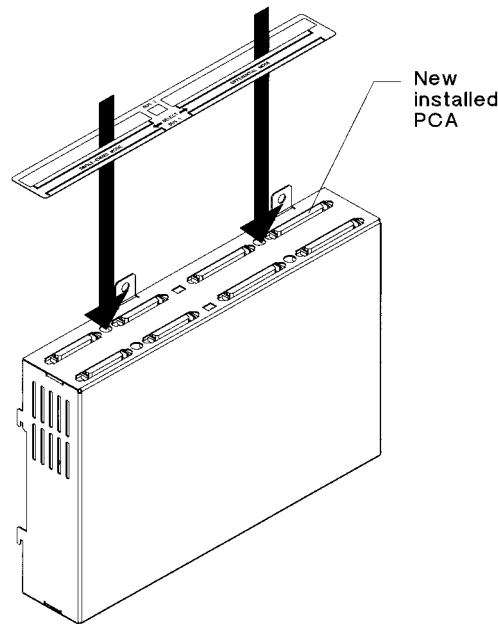
3. Connect the cables as shown in Figure 3-20.
 - #1 - drive interface cable
 - #2 - power cables (two connectors)
 - #3 - SCSI cables (top cable in the diagram is the one just installed)

CAUTION

Take care that you do not pinch the SCSI cables on the edge of the SCSI assembly enclosure as you mount the assembly on the side of the chassis in the next step.

4. Remount the SCSI interface assembly on the chassis with four T-20 screws.
5. Attach the SCSI interface assembly label for two interface PCAs (see Figure 3-21)

Figure 3-21 **Attaching SCSI Interface Label**



6. Remount the interface module on the side of the chassis with four T-20 screws.

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes

Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes Using 5.2-GByte Drives

Step 6: Install the Slot/Drive Map

NOTE

If you are installing only a C5139 kit to convert to a six-drive jukebox, use the 4/6-drive map.

If you are also installing a C1158J/K/L kit with the C5139J/K/L kit and making a 10-drive jukebox, use the 10-drive map.

1. Place the replacement drive map label over the previous label.

The drive map label is located on the inside of the left middle access panel (see Figure 3-1).

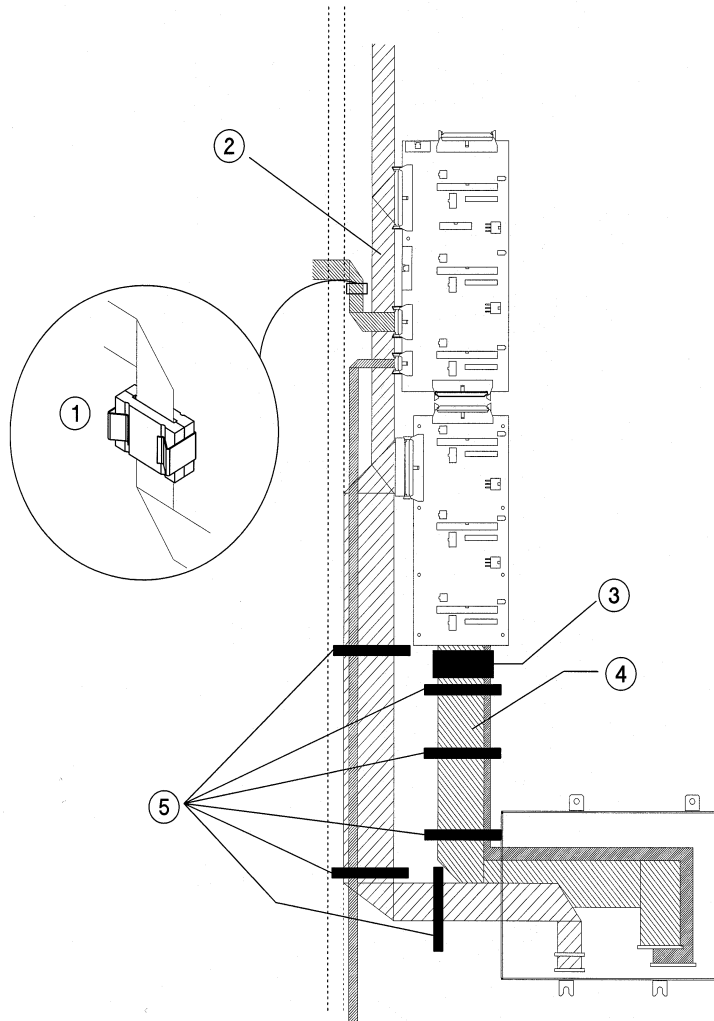
2. Go to “Step 7: Install RFI Modifications” on page 3-29.

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives

Step 7: Install RFI Modifications

Figure 3-22

Installing RFI Clamps and Cable Clamps



Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes

Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes Using 5.2-GByte Drives

1. Place the RFI clamp on the front panel cable as shown by #1 on Figure 3-22.

Remove the adhesive covering on the back of the RFI clamp and stick the back of the clamp against the chassis as shown. You will have to push the GPIO cable (#2) to the right a small amount to make room for the clamp to lie flat against the chassis.

NOTE

In the next step, you have either one or two RFI clamps depending on whether the jukebox you are converting has one or two interposer PCAs. The step is described as if you have two interposer PCAs.

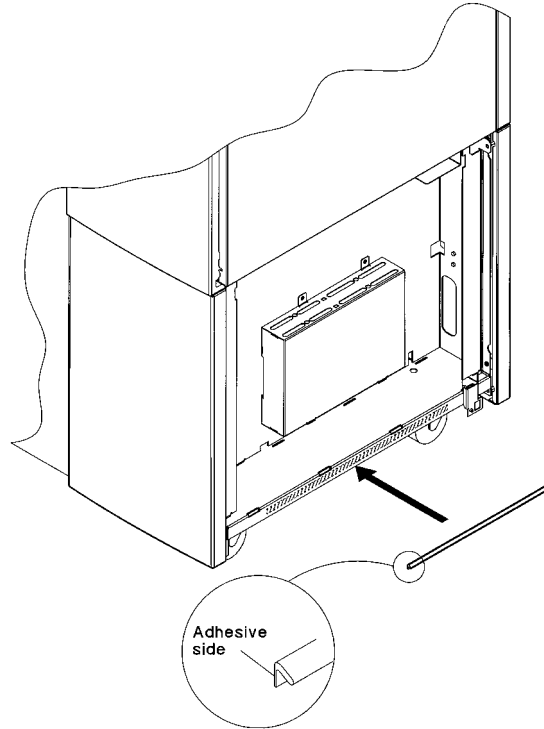
2. Unstick the RFI clamps at location #3 and remove them from the SCSI cables. Use the RFI clamps from the kit. Slide the clamps up on the SCSI cable until the clamps are as close to the bottom of the lower interposer PCA as you can get then. Restick the clamp on the bottom SCSI cable to the chassis and stick the clamp to the top SCSI cable to the top of the first clamp.
3. When installing a lower interposer PCA, attach the second SCSI cable clamp to the *top* of the clamp described in Step 2.
4. Place the thin, flat, cable clamps the six locations shown by #5 on Figure 3-22.

The goal of the cable clamps is to hold the cable bundles as flat and as close to the chassis wall as possible to minimize RFI.

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

Figure 3-23

Installing an EMI Gasket on the Lower Edge of the Right Side



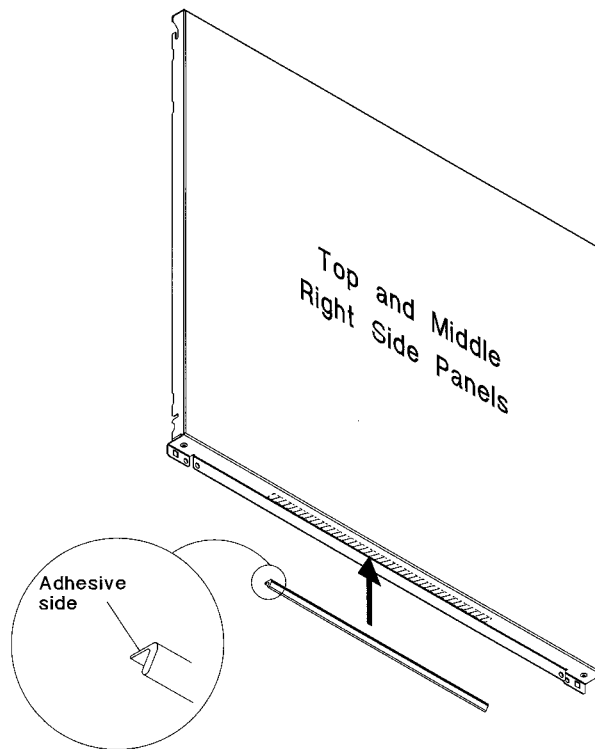
5. Remove the adhesive strip from an EMI strip and attach it to the bottom edge of the right side as shown in Figure 3-23.

Note the orientation of the EMI strip shown in the inset on the figure.

Converting 2.6-Gb-Drive Jukeboxes to 5.2-Gb-Drive Jukeboxes
**Converting From Jukeboxes Using 2.6-Gbyte Drives to Jukeboxes
Using 5.2-GByte Drives**

Figure 3-24

Installing an EMI Gasket on the Bottom of the Right-Side Panels



6. Remove the adhesive strip from an EMI strip and attach it to the bottom edge of the top and middle right side access panels as shown in Figure 3-24.

Note the orientation of the EMI strip shown in the inset on the figure.

7. Go to Chapter 4, "Checking/Downloading Firmware."

Step 8: Install the Slot/Drive Map

Place the replacement drive map label over the previous label.

The drive map label is located on the inside of the left middle access panel (see Figure 3-1).

Overview

This chapter provides the following:

- Procedures for checking the revision level of the jukebox and drive firmware.
- Procedures for connecting to the jukebox for downloading firmware.

Checking and Downloading Firmware

NOTE

If upgrading a jukebox:

1. Go to “Check the Firmware Revision Level” to see if the jukebox controller and/or drives need the current revision of firmware.
2. Go to “Downloading Firmware” if necessary.

If converting a 2.6-GB-drive jukebox:

1. Go to “Downloading Firmware” and download the current revision of *jukebox* controller firmware.
2. Go to “Check the Firmware Revision Level” to see if the drives need current firmware.
3. Go to “Downloading Firmware” if Step 2 above shows that the drives need current firmware.

Check the Firmware Revision Level

1. Ensure the jukebox is powered on.
2. Press **NEXT** to select INFO *, then press **ENTER**.
3. REVISION # displays. Press **ENTER** to view the robotics controller firmware revision.
4. Write down the revision number, then press **CANCEL**.
5. Press **NEXT** until DRIVE FW * displays, then press **ENTER**.

UPDATING displays briefly, then D_x REV zzzz displays (where x represents a drive number and z represents the revision level of that drive).

6. Press **NEXT** or **PREV** to select other drives and press **ENTER**.
7. After viewing the revision level for all drives, press **CANCEL**.

Checking/Downloading Firmware
Checking and Downloading Firmware

Downloading Firmware

NOTE

Ensure that the jukebox is not in LUN mode (logical unit numbering). Downloads must be done with LUN mode off.

IMPORTANT

*If you are going to download firmware for the jukebox controller, the customer's default configurations should be recorded so that the jukebox can be correctly restored. Go to the CONF * menu on the control panel to access and display the current jukebox configurations.*

1. Turn the jukebox off.
2. Ensure that your PC tool is off.
3. Remove any cable connections to the single-ended ports on the interface module.
4. Connect a SCSI cable between your PC tool and one of the single-ended ports on the interface module. (Connectors on the module are high-density.)
5. Turn the jukebox on.
Wait until the jukebox shows READY in the display.
6. Turn your PC tool on.
7. Follow your download utilities instructions to download the firmware needed (jukebox and/or drives).

Go to Chapter 5, "Verifying Proper Jukebox Operation, Labeling, and Cleanup."

Verify Proper Jukebox Operation

1. Check for proper drive operation.

Run a “random write and verify” for approximately two minutes to check the operation of the drive.

2. Check for proper jukebox operation by running the “Wellness Test.”

NOTE

If a failure occurs, refer to Chapter 4, “Troubleshooting” in the 660ex/1200ex Optical Jukebox Service Manual (C1104-90030).

3. Enter any customer configurations that are different than default using the CONF * menu.

Restore Interface Selection and Cabling

1. Replace the SCSI cables on the interface PCA ports in the same configuration as they were before the upgrade/conversion.
2. Place the interface select switch to select whichever interface type it was before the upgrade/conversion (single-ended or differential).

Restore Non-Default Configurations

Table 5-1

Default Configuration Settings

Configuration	Default Value	Jukebox Setting
RECOVERY	ON	
DUAL PICKER	ON	
POWER SECURE	OFF	
SECURE MAILSLOT	ON	
MAILSLOT DOOR	CLOSED	
SLOTS 230-238	ON	
POWER SECURE	OFF	
REPORT RECOVERED	ON	
CONF 40	OFF	
WRITE VERIFY	ON	
LUN MODE	OFF	

Verifying Jukebox Operation and Labeling
Restore Non-Default Configurations

Configuration	Default Value	Jukebox Setting
SCSI Addresses (four- and six-drive jukeboxes)	robotics controller = 6 drive 1 = 5 drive 2 = 4 drive 3 = 3 drive 4 = 2 drive 5 = 1 (if installed) drive 6 = 0 (if installed)	
SCSI Addresses (ten-drive jukeboxes)	robotics controller = 6 BUS 1 drive 1 = 5 drive 2 = 4 drive 3 = 3 drive 4 = 2 BUS 2 drive 5 = 5 drive 6 = 4 drive 7 = 3 drive 8 = 2 drive 9 = 1 drive 10 = 0	
Password	000-000-000	

Verifying Jukebox Operation and Labeling
Restore Non-Default Configurations

Table 5-2

Description of the Configuration Choices

Configuration Name	Description
RECOVERY ON/OFF	Toggles between ON and OFF. If set to ON, the jukebox attempts to recover from errors. If set to OFF, the jukebox immediately stops moving if an error condition occurs. The default configuration is RECOVERY ON, and recovery should remain ON under normal conditions.
DUAL PICKER ON/OFF	Toggles between ON and OFF. If set to ON, the jukebox runs with dual picker addressing ON . If set to OFF, the jukebox runs with dual picker addressing OFF. The default setting is DUAL PICKER ON and this mode should remain ON under normal conditions. .
SECURE MS ON/OFF	Toggles between ON and OFF. If set to ON, loading and ejecting disks is disabled. If set to OFF , loading and ejecting disks is enabled. The default configuration is ON.
SLTS 230–238 ON/OFF	Toggles between ON and OFF. If set to ON, Slots 230 to 238 are made accessible to a software application. If set to OFF, slots 230 to 238 are made unavailable; slot 229 becomes the last available slot. The default configuration is ON This configuration accommodates applications that do not support slots 230 to 238.
POWER SECURE ON/OFF	Toggles between ON and OFF. If set to ON, the selection of the SECURE MS configuration is retained through power cycling (or power outage). If set to OFF , the jukebox returns to the default setting of this configuration after a power cycling. The default setting of this configuration is OFF).

Verifying Jukebox Operation and Labeling
Restore Non-Default Configurations

Configuration Name	Description
REP RECOVERED ON/OFF	Toggles between ON and OFF. If set to ON, recovered errors are reported. If set to OFF, recovered errors are not reported. Default setting is ON.
WRITE VERIFY ON/OFF	Toggles between ON and OFF. If set to ON, write verify is forced. When set to OFF, the drives may write verify or not, depending on how they are manually configured or how they are configured by the jukebox application software. The default configuration is ON.
MS DOOR OPEN/CLOSED	Toggles between OPEN and CLOSED. If set to OPEN, the mailslot door always remains open. If set to CLOSED, the mailslot door remains open for ten seconds after disks are loaded or ejected, automatically closes when the mailslot is empty, and does not reopen until the LOAD button is pressed.

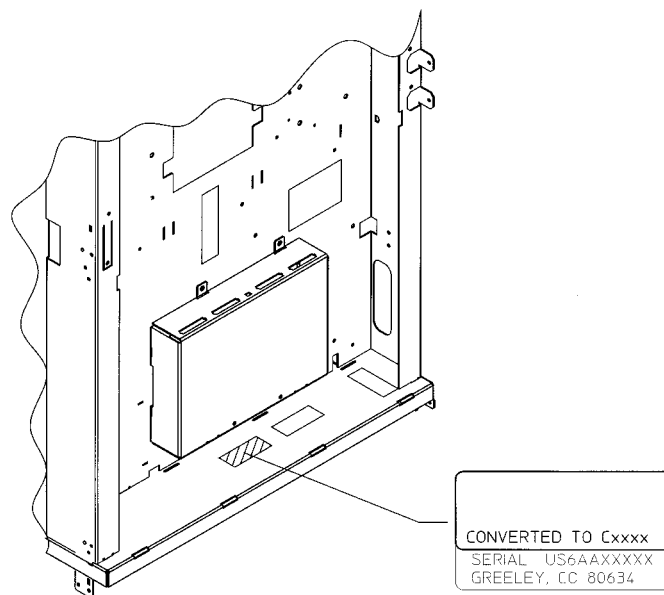
Adding a Product Upgrade Label and Replacing the Product Nameplate

1. Place the product upgrade label partially over the product label as shown in Figure 5-1.

COVER THE PRODUCT NUMBER BUT DO NOT COVER THE SERIAL NUMBER.

Figure 5-1

Positioning the Upgrade Label Over the Product/Serial Number Label

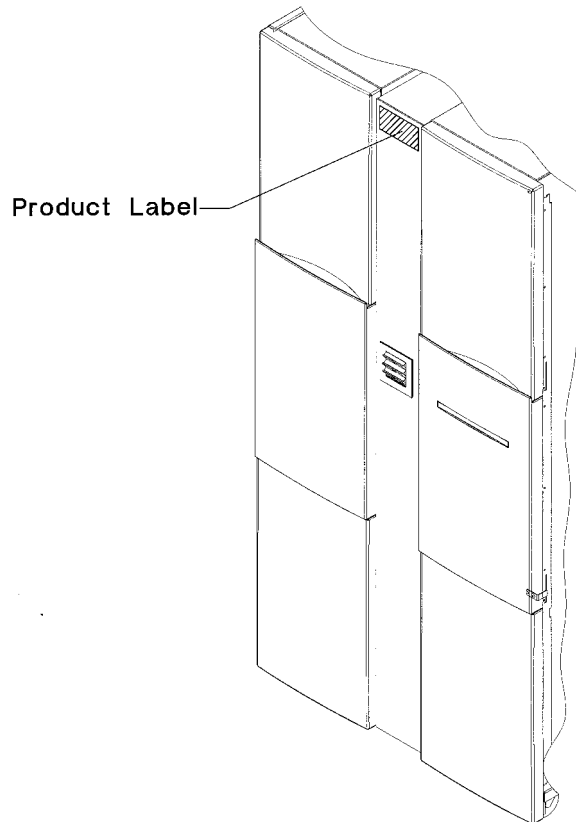


Verifying Jukebox Operation and Labeling
Adding a Product Upgrade Label and Replacing the Product Nameplate

2. Place the new product nameplate on the top of the jukebox as shown in Figure 5-2.

Figure 5-2

Position of the Product Label (Nameplate)



Replace the Jukebox Access Panels

1. Refer to Figure 2-1 and replace the RFI side panels and the outside side panels.
2. If removed the rear panel to add magazines, replace the rear panel.

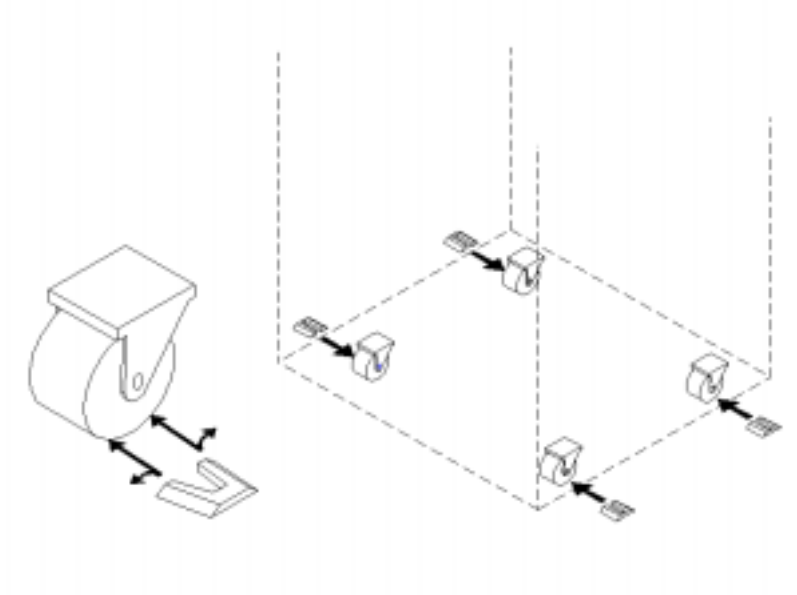
Install the Wheel Chocks

This jukebox rolls easily and could cause injury or damage if allowed to move unintentionally.

Four wheel chocks are provided to stabilize the jukebox in position. Install the wheel chocks after the jukebox is moved to its operating position and all cables are in place.

Figure 5-3

Installing the Wheel Chocks



1. After all cables and panels are mounted, roll the unit to its final position.
2. Spread the chock apart slightly and slide it around the bottom of the wheel as shown on the left side of the figure above.
3. Repeat Step 2 for the remaining three wheels.